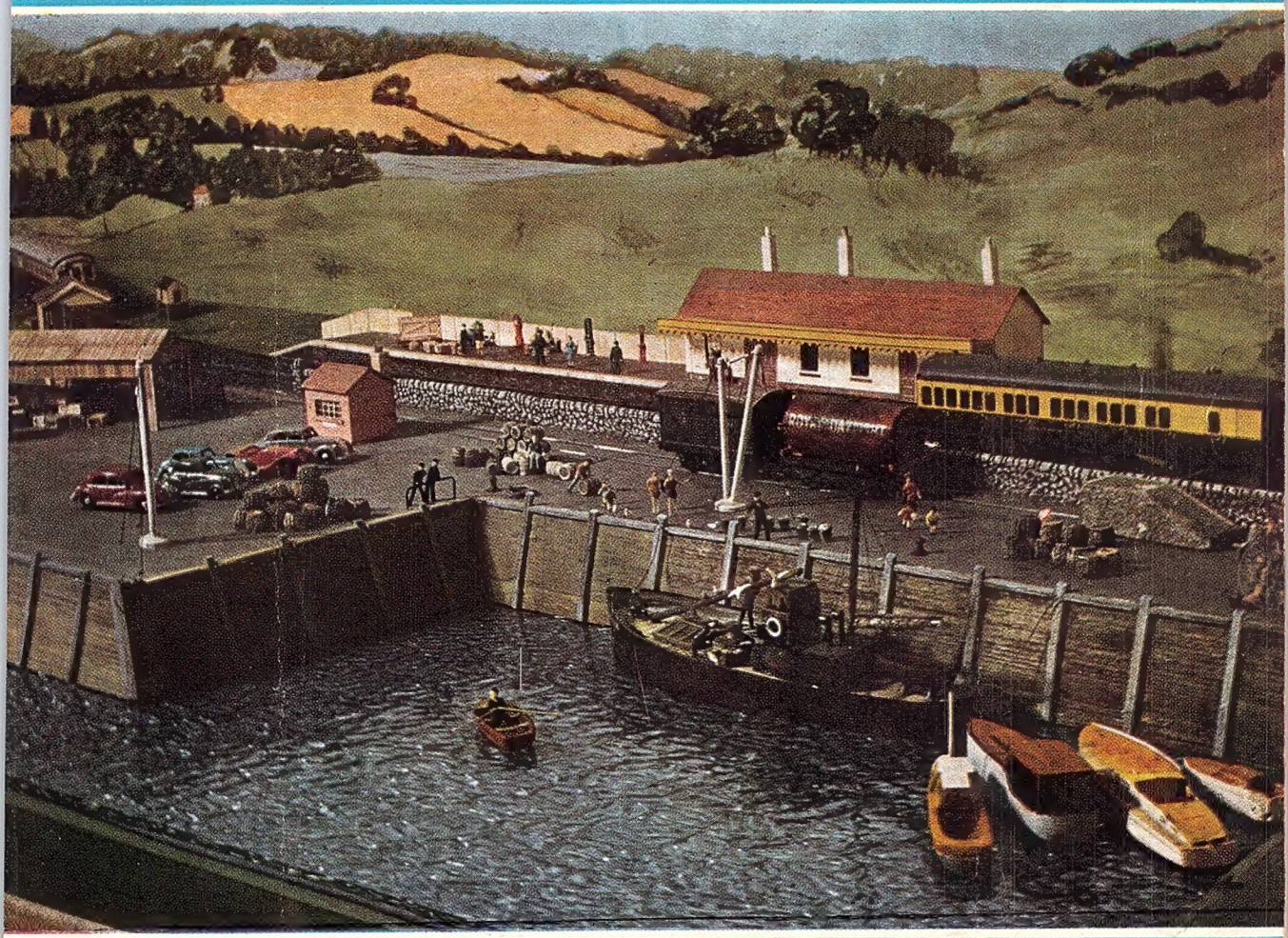
Model Railway Exhibition Number

RAILWAY MODELLER

APRIL 1955



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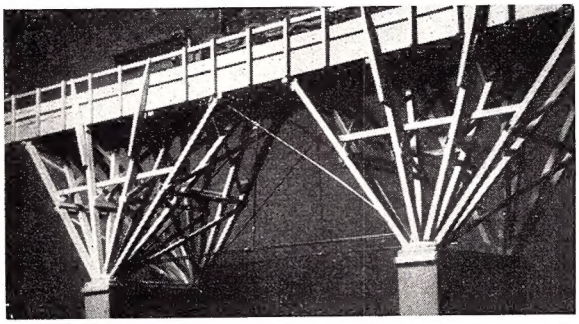

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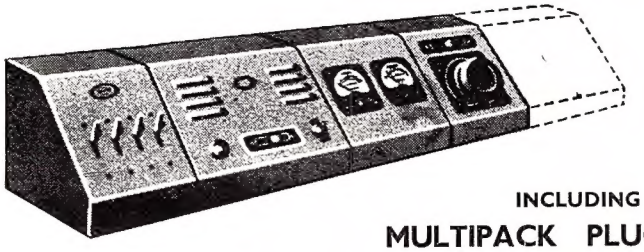

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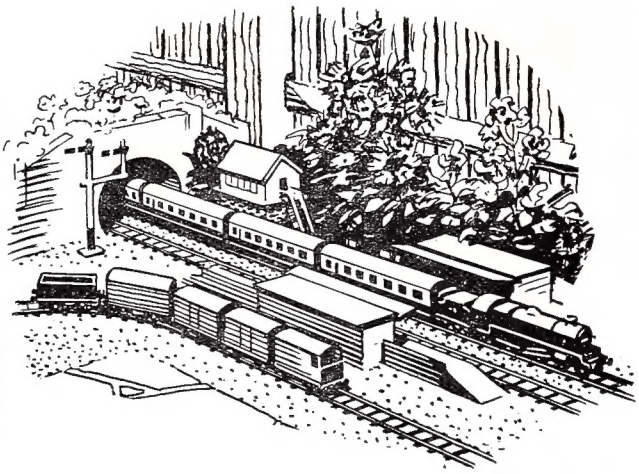

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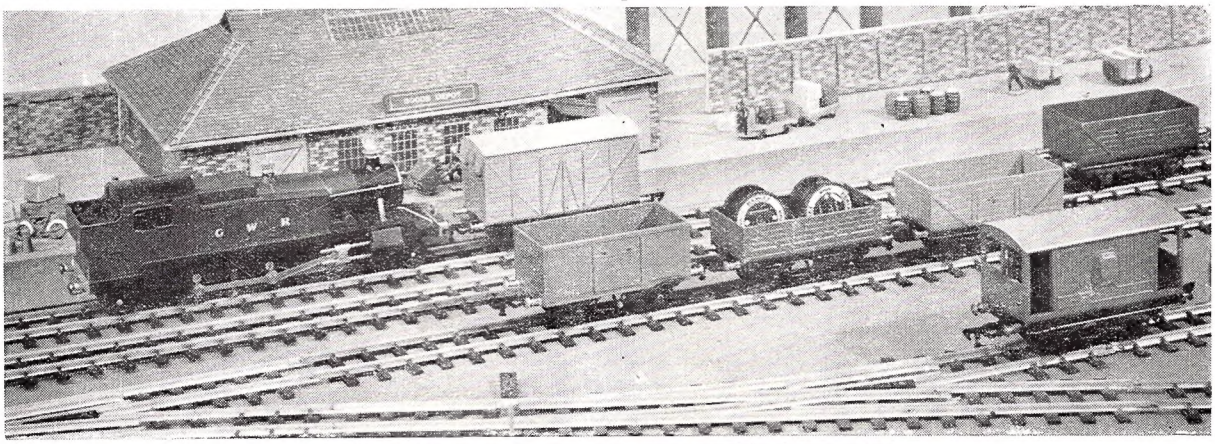

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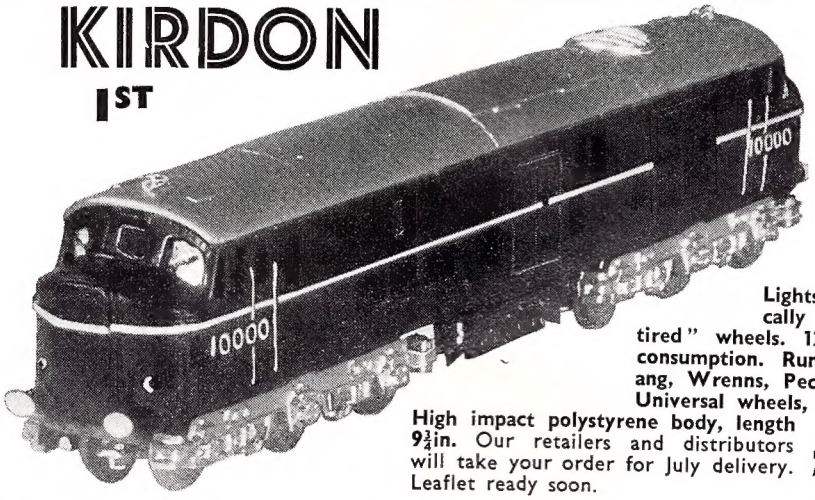

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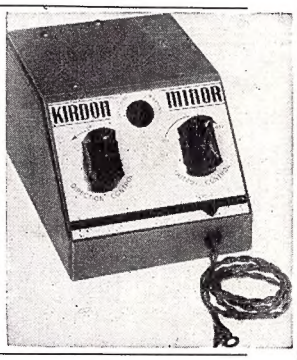

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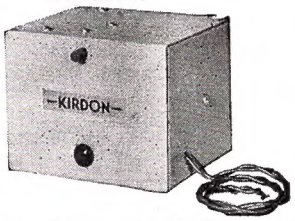

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For the Average Enthusiast Specializing in Small Scale Railway Modelling

VOL. 6 No. 54 APRIL 1955

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Back numbers of most issues of the Railway Modeller from November 1951 are available, price 1/6 each plus postage (2d. first copy, ½d. each additional copy). We regret that certain issues are now out of print, while stocks of many others are low.

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NEXT MONTH

J. Harrison describes how he built Railway Street, Torpoint, an exercise in low-relief backgrounds. The Railway of the Month will be the Falmouth Society's club layout.

THE LOBBY

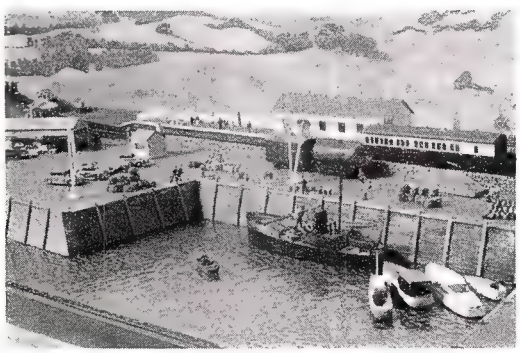
THE Model Railway Exhibition is unique, not because it is the largest of its kind, but because for many years now a band of enthusiasts, amateur and professional, have forgathered at the Central Hall each Eastertide to show to the general public what a grand hobby we enjoy. What began as a simple display of the work of the members of the Model Railway Club has in the course of time grown to be the recognized climax of the model railway year, and the national—if not international—shop window of the craft.

As is our custom, we celebrate this occasion with a special issue and a full colour cover, while in addition to our usual features we include a four-page feature on the exhibition itself. We ourselves will be present at the exhibition, in our usual place, where we hope to meet all our old friends and to make many new ones, for surely exhibitions are not arranged merely to display models ; they provide a meeting place for enthusiasts, and what better place could there be for meeting fellow railway modellers than at the Central Hall the week after Easter ? Progress in our hobby is made not so much by gifted individuals as by groups of average enthusiasts banded together in the good fellowship of a club, each contributing his portion to the sum of experience. It is no coincidence that the majority of our contributors are themselves members of clubs.

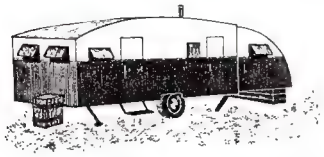
Remember the date, April 12 to 16, and the place, the Central Hall, Westminster.

COVER PICTURE

The harbour on A. E. Wherli's Balsa Magna branch is littered with scenic accessories cast in plaster, as described in the article on page 80.



The Railway of the Month



THE CHARFORD

or A Railway in a Caravan

THIS is the story of a 4 mm. scale two-rail model railway with an unusual space problem. The writer, who is in the Royal Air Force, has been living in a caravan for over a year, but nevertheless has contrived to fit in a portable layout alongside wife and family. It may be mentioned here that the success of the line is in no small measure due to the tolerance and forbearance of the lady of the "house," who has put up with the sawing and hammering, etc., to a remarkable degree.

Now to details. The first consideration when planning the line was storage. After consultation with the domestic authorities it was decided that a space approximately sixteen inches square by six feet high in one corner of the living room behind a curtain would fill the bill. (The van, incidentally, is one of the more modern types twenty-seven feet in length.)

The second point to consider was the relationship between the storage space and the available length of run, which was 11ft. 10½in. Simple arithmetic decided that two sections of 14in. x 5ft. 10in. fitting face to face for storage would give a workable layout on the terminus marshalling-yard principle. It was then decided that the station half of the layout should rest on the dining table, and the marshalling yard should plug into one end with a drop-down leg for support at the other. This in practice has proved quite satisfactory.

In between spells of building the baseboard sections (materials used being $\frac{3}{16}$in. hardboard braced with aluminium angle and wood) it was necessary to think about the possible geographical location of the line, bearing in mind the available rolling stock and accessories from a previous model railway. Hours of dreaming and poring over maps eventually led to a placed called Charmouth in Devon, which is not actually served by a railway but which would give the desired operational scope. Accordingly the layout was to be a model of a branch of the Southern Railway (period 1945-47) from Chard Junction to Charmouth (name changed to *Charford* to satisfy certain members of the family!) and a G.W.R. connecting line to Bridport so as to have an excuse to use a 5700 pannier and some Great Western stock which was on hand.

Having decided all these points, the remaining item was one of trackwork. C.C.W. chaired track was eventually decided upon, as the thick cork bases provided that extra rigidity which was aimed at. Nickel silver rail being available, this was used in bull-head form, and has proved excellent.

The available loco stock is quite extensive for such a small layout and consists of:

S.R. 4-6-2 Merchant Navy—"Brocklebank Line" (modified Farish).

S.R. 4-4-0 Schools class—"Sherborne" (hand built).

S.R. 0-6-0 tank Essar free-lance kit (hand built and fully detailed).

G.W. 0-6-0 pannier tank 5700 class (hand built).

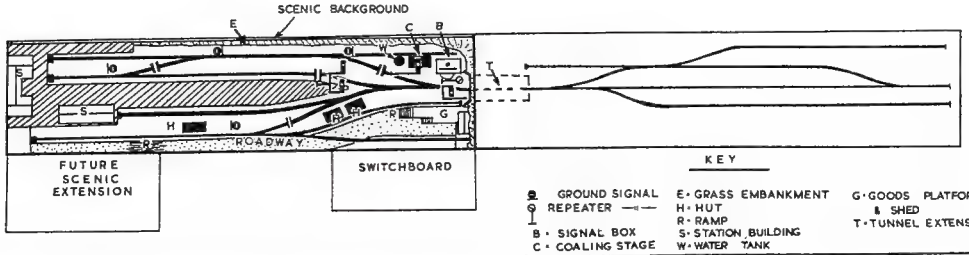
The Merchant Navy Pacific may seem odd, but at least the class does appear on branch lines on the Southern with commendable frequency. (That is the writer's excuse anyway.)

Rolling stock is also quite extensive. Nucro autocouplings are standard throughout all stock, but the two Southern corridor coaches are joined permanently into a "through coach" set. Magnets between the rails are used to effect the automatic uncoupling.

As can be seen, there is no turntable at Charford, so it is assumed that a "Wye" junction exists beyond the tunnel at the point where the Bridport line meets the Chard-Charford line and engines are turned there. Actually the engines are turned by hand in the marshalling yard section, but it is hoped to fit a turntable at a later date.

Readers will already have guessed that timetable operation to strict prototype practice is the chief aim, but, in addition, it is hoped to make the station section as scenically perfect as possible, which, of course, will take time. When this has been completed to satisfaction, then the whole of the rolling stock will be overhauled and replaced so as to improve the general standard.

DIAGRAM — CHARFORD BRANCH



BRANCH

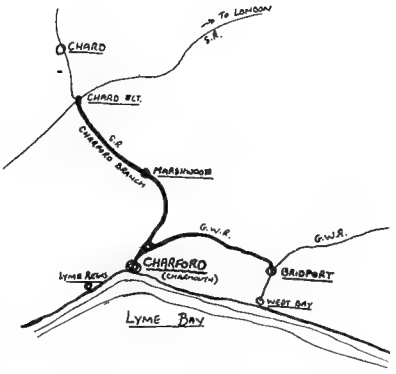
by J. W. Charman

Reverting to timetable running, several variations are being worked out, and it is hoped eventually to evolve two or three examples which can be used according to the operating time available and how many assistants/" viewers " are present. With such a large amount of rolling stock, it is evident that Charford must be a pretty busy little place, and accordingly it is assumed to be a small fishing port with large summer tourist traffic. In addition to this it has acquired a considerable " dormitory " population from some of the nearby towns, so this is another of the Southern's well-patronized branches which is in no danger of being closed ! In actual fact, the writer is finding this relatively simple layout very exciting to operate and has proved conclusively to himself that one does not have to have a large 24ft. x 36ft. layout to enjoy the hobby to the full.

Having been given the general picture of the layout as a whole, modellers may be interested in one or two constructional details and how some of the problems were overcome.

The size of the layout having been decided upon, a search was made for suitable materials to use in the construction. General funds being low, it was necessary to think about cost, as well as lightness and strength. By great good fortune, a large sheet of $\frac{3}{16}$in. hardboard was obtained at a very low price, and it was decided to use this for the base as well as for the ends of the station section and the background supports.

The diagrams will make this clear. To brace the two sections a combination of wood and aluminium angle was used. Although perhaps all-wood bracings would have been more rigid, no trouble has been



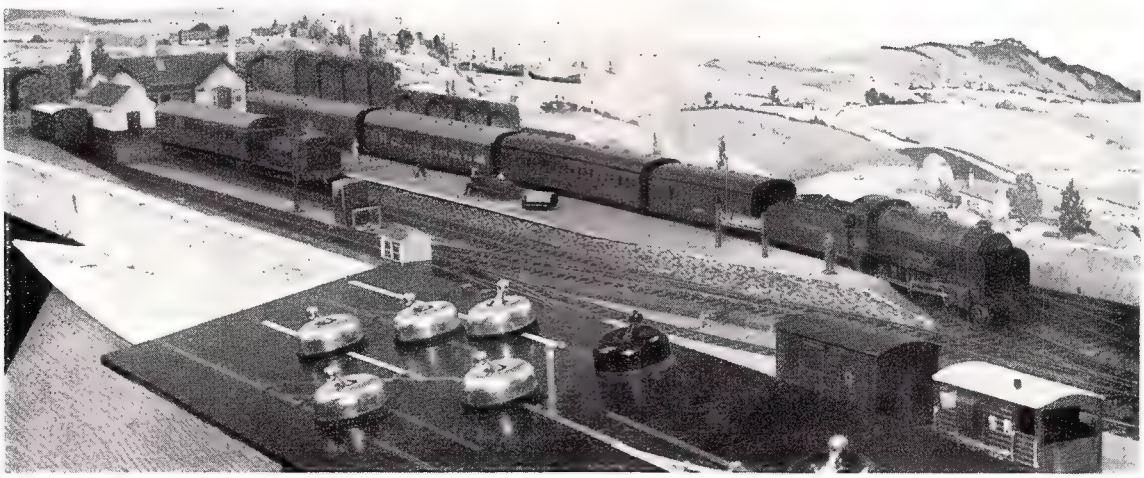
Sketch map of Charford Branch.

experienced so far. The two baseboards are joined very simply by two bolt " pegs " which fit into corresponding sockets in one another. Thin brass strips taken from old cycle batteries provide the electrical contacts, and the good old method of a pair of hinges with removable pins is used to ensure correct location and locking.

For storage purposes the " marshalling yard " is designed to fit face to face with the scenic section and the two are held together by a simple system of catches. The resultant " coffin " can then be stood on end in the corner. In passing it may be mentioned that the folding switchboard is arranged so that it fits snugly inside the layout when the two sections are face to face.

The power supply for the layout comes from a Kirdon Minor unit which has been modified to provide half-wave or straight D.C. as desired. This little unit is clamped to a small piece of board, to which is also fixed a transformer giving an output of thirty volts A.C. for the point motors. Some people may shake their heads in horror at the idea of using thirty volts on a sixteen-volt point motor, but the writer had had so much trouble with faulty operation on the lower voltage that he decided to use thirty volts. This has been 100 per cent successful in curing all sticki-

General view of Charford, showing switchboard.



Goods train about to depart from Charford.

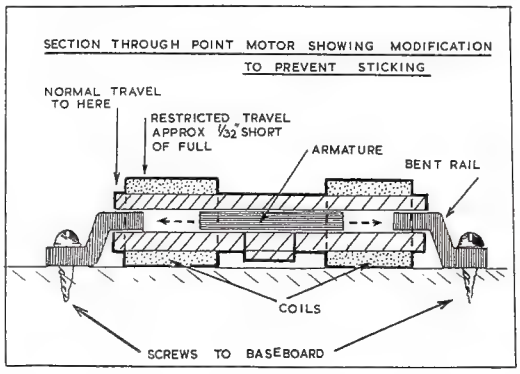
ness and sluggishness, with *absolutely no harm* to the motors themselves.

When operating the layout, the operator usually has the power pack resting on his knees, the current supply for the track being fed into the switchboard by a post office type jack plug. The point motors are operated by the "electric pencil" method—an idea borrowed from Mr. K. Northwood's North Devonshire Railway (see April/May 1953 RAILWAY MODELLER). This consists of a flying lead from the twenty-four-volt transformer which is touched on studs set in the control panel at places on the track diagram corresponding to the location of turnouts. These studs are wired to the point motors in such a way as to enable the desired route to be set up merely by tracing it on the track diagram with the "electric pencil."

So far only the turnouts on the station baseboard are solenoid operated, those on the marshalling yard being manipulated mechanically by the Hamblings "Addalever" system.

While on the subject of solenoid point motors the following tip may prove useful to those using the cheaper type of Rogerson mechanism. This motor is liable to stick at the extremities of its throw. The cure is simple and consists of fastening a spare piece of rail in such a way that it is inserted into the end of the solenoid to prevent the plunger from moving fully to the end of its travel.

As stated earlier, Nucro auto-couplers are fitted as standard to all stock, but, excellent though these are, they do not prevent buffer-locking on long-wheelbase vehicles. The writer has overcome this problem by soldering a small piece of wire vertically downwards about an eighth of an inch behind the hook of the coupling. All locos are fitted with a similar type of hook arrangement for the same reason. The presence of this vertical piece of wire means that the bar of the



adjacent vehicle rides against it when being pushed and thus, if the wire is arranged properly, the buffers of the two vehicles are just prevented from contact on straight track. With the couplers so adjusted it is possible to push an assortment of wagons, etc., over reverse curves of alarmingly small radii with complete abandon.

The diagram will perhaps explain the idea more clearly.

Magnets used for uncoupling are of two types, the first being electro-magnets fixed underneath the baseboard and operated by the "electric pencil," and the second permanent magnets of the type sold by Messrs. Keysers. Both are highly successful, and together with the Nucro coupler give as good results as one could wish for.

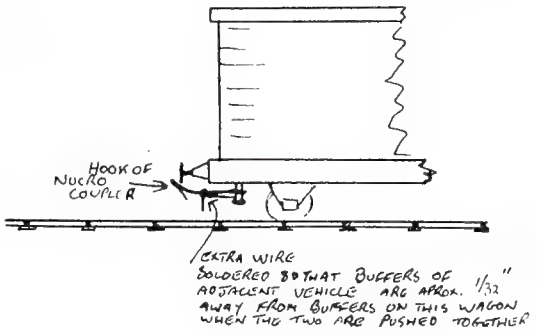
On such a small layout scenery can present a real problem, and, as the photographs show, it is by no

"Schools" class "Sherborne" on express.

Charford station throat.

means finished. Progress, however, is steady if slow, and the various details are gradually being fitted into place.

Most of the buildings come from the popular Hamblings " Bilteezi " series, and liberal use has been made of various brick papers, medical lint and, last but not least, balsa wood by the sheet. Many modellers are reluctant to use this latter material, being of the opinion that it is suitable for use only by model aeroplane builders. In point of fact, by virtue of its softness and strength, there is hardly a job for which it cannot be used. All the bases for the platforms,



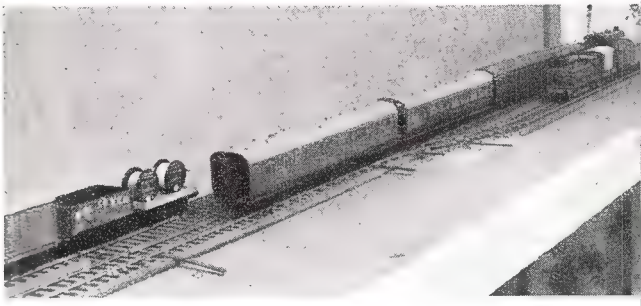
etc., are made from balsa and their strength and lightness must be seen to be believed.

The background scenes will be recognized as the ones produced by B. J. Ward and Sons, and in point of fact look even better " in the flesh " than they do in the photographs.

Since the photographs were taken the construction of signals has been put in hand. These have been made from " B. and K." bits suitably modified for the purpose. It is intended eventually to operate them by some mechanical linkage, but for the present they are worked by the " reach-over-and-pull " method.

When the Charford Branch has been completed to the writer's satisfaction a further addition will be made to the station baseboard in the shape of a section comprising a street scene, which will plug into the side as shown in the diagram. this giving the layout an added depth ; and when the time comes to say goodbye to the caravan, steps can be taken to extend the length of running lines and perhaps even incorporate the Charford Branch in a larger layout altogether.

In concluding this article the writer wishes to acknowledge with thanks the encouragement, assistance and advice he has received from Mr. K. Northwood, Mr. D. Rowland, Mr. D. Kelso (who took so much trouble over the excellent photographs), and, last but not least, the long-suffering lady who has borne all this with untold patience and good humour.



Above : The marshalling yard.

Below : The author at the controls.

How I made a

2MM SCALE BEYER-GARRATT

by H. B. Whall

This interesting model is to be seen at the Model Railway Exhibition, running on Major Provo's "OOO" layout.

WHEN asked if I would undertake to make a working model of one of the Beyer-Garratt locomotives in 2mm. scale, I replied without hesitation "yes," but it was only after some thought that I began to wonder just what I had let myself in for! However, having committed myself, there was no question of backing out, though I must confess that I viewed the many problems involved with some misgiving.

Well, numerous photographs and drawings began to arrive, but it was very kindly left to me to select the most suitable prototype for making in this scale.

As most railway enthusiasts will know, there are many types of the Beyer-Garratt serving throughout the world, from the original 0-4-0 + 0-4-0 built for the Tasmanian Government in 1910, which weighed thirty-three tons and had a tractive effort of 16,000lb., to the giant built for the South African Railways. This locomotive has a wheel arrangement of 4-8-2+ 2-8-4, weighs 214 tons and has a tractive effort of 89,000lb. at eighty-five per cent boiler pressure!

After long and careful study and weighing up the pros and cons of the many types, I finally settled on a version with a wheel arrangement of 2-8-2+2-8-2 as the most suitable, one of the principal reasons being that the model had to negotiate a curve of 15in. radius and the types with cylinders placed *between* bogie wheels greatly restrict the swing of the latter unless the cylinders are set out sideways. This not only ruins the scale appearance, but makes the fitting of the Walschaerts gear next to impossible, it being quite a difficult task to get all the shafts in line and working smoothly even when the cylinders are in their correct positions.

The two photographs show first the full-size locomotive and second the model. A close study of the two will make apparent one or two modifications that were found necessary. To give one example, the fixed wheelbase of the power bogies should be 13ft. 1½in. (i.e. 26.25 mm. in the model), but owing to the fact that wheels in 2mm. scale are of necessity oversize if they are to stay on the track, the wheelbase came out at 16ft. (i.e. 32mm.). This meant either an increase in the overall length of the model or the power bogies being set farther under the boiler unit. This latter method was chosen, and in order to compensate in some degree the self-clearing ashpan was made slightly under length to prevent overcrowding the space too much.

A few of the finer details have been omitted, since they would have been too delicate to stand even the most careful handling.

It is not my intention to go into all the constructional details of body, boiler, cab, etc., because most readers will be quite familiar with the way these are made, I will confine myself to a description of the essential part of the locomotive, the forward power bogie.

The model being for two-rail operation, the main frames are insulated from each other with "Vole" brand linen tufnol blocks, two of which are extended upwards to carry the motor pole-pieces and the top bearing for the armature shaft. These blocks are shown shaded in the sectional drawing.

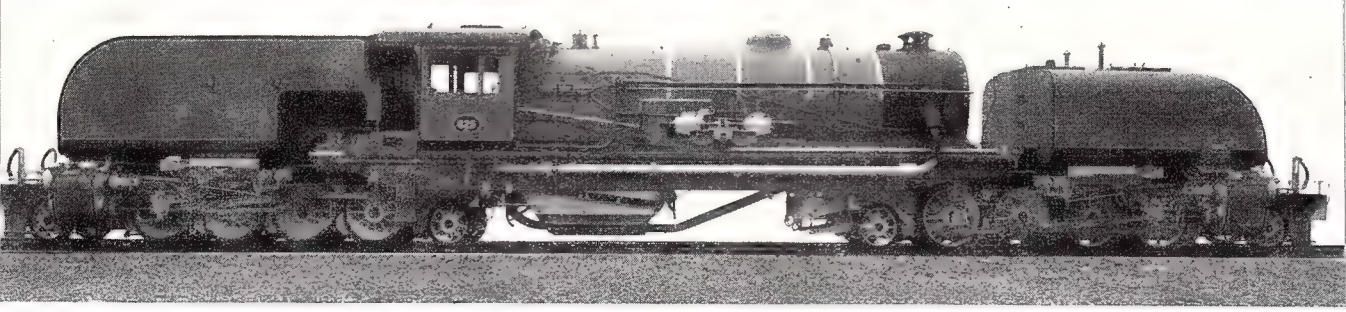
The armature shaft is made from $\frac{1}{16}$in. diameter silver steel, hardened and ground at each end to an angle of 60°. The bearings are of phosphor-bronze, in which are formed cups that have included angle of 45° to take the needle ends of the shaft. For adjustment, the top bearing consists of an 8 B.A. phosphor-bronze screw with a thin locking nut on the underside of the bridge piece, and for this a special spanner is provided.

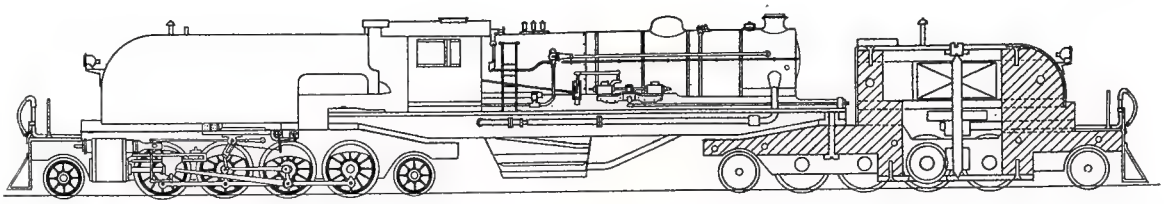
The lower bearing is located in a phosphor-bronze strip screwed to the bottom ends of the tufnol blocks, a slot being cut to allow clearance for the worm wheel.

The five-pole armature is ½in. diameter by ¼in. deep and is built up of "Stelloy" laminations coated with shellac and assembled on a brass tube 0.093in.

The prototype.

Photo courtesy Beyer Peacock & Co. Ltd.





o.d. by 0.0625in. bore, the shaft having been knurled in the middle before hardening, thus making it a tight fit in the tube when assembled.

Each slot in the armature is wound with 11ft. of 44 S.W.G. wire, silk-covered over enamel. It seemed best to use this type of wire in such a small motor in order to make sure that there was no leak between the adjacent turns or coils, since any such leak, however small, would have been fatal to the efficiency of the motor. The armature is star wound, i.e. all the starting ends are soldered together and the finishing ends are taken to the commutator segments. This gives a greater starting torque and makes really slow running possible, while it does not impair the hauling power of the motor to any great extent. Not being an electrical engineer, I have arrived at these conclusions after many experiments and tests. The motor functions perfectly on 12 volts D.C., but was tested for one hour under load on 15 volts, when the consumption never rose above .15 amps, and it remained cool throughout the run. This would seem to justify the method employed.

The commutator is made from $\frac{3}{8}$in. diameter linen tufnol. The end of the rod was trued up and a drilling jig in the form of a steel cup was fitted tightly over the end. This had a centre hole (No. 53 drill) and five $\frac{5}{64}$in. holes equally spaced on a pitch circle of 0.087in. radius. All holes were drilled to a depth of $\frac{1}{4}$in., after which the jig was removed, and while the end of the rod was held in a special collet in the vice a short piece of 14 S.W.G. copper wire was driven into each of the five holes.

The rod was then held in a $\frac{1}{8}$in. collet in the lathe and, with a very sharp tool, the end was faced up so that the copper wires were flush with the end of the rod. This was then turned down for a distance of $\frac{3}{32}$in. to 0.178in. diameter, thus splitting the copper wires in half and forming the working surface of the commutator.

Finally, the rod was parted off on full diameter so as to leave a flange $\frac{1}{16}$in. thick. Before assembling, a radial groove was cut in the back ends of the copper wires and a small piece of wire was soldered into each, and then bent forward over the edge of the flange to receive the finishing ends of the coils.

The brush gear consists of two arms made from $\frac{1}{16}$in. square brass wire and at one end of each was filed an inverted V slot into which a small piece of copper-carbon was forced.

These arms lie in slots milled on either side of the tufnol block, just under the pole-piece support. Directly behind the pole-pieces, a fine hole is drilled vertically and centrally through the slot and brush arm to take a pin that forms the fulcrum on which the arm swings. At the end of the slots a $\frac{5}{64}$in. hole is drilled right through from side to side to accommodate a compression spring made from 38 S.W.G. spring brass wire, wound on a 20 S.W.G. mandrel, and which engages the extreme ends of the brush arms, one of which is provided with an insulating pad. Each pin is then connected electrically with its respective side frame.

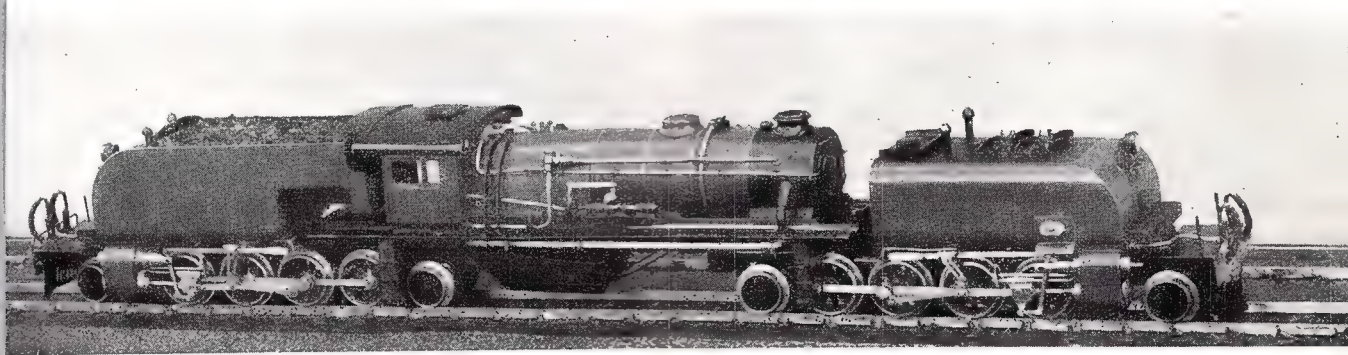
The driving wheels, mounted on split axles, are 4ft. (i.e. 8 mm.) diameter on the tread and are made with hard brass rims, the type-metal spokes being die-cast into them, together with the crank pins. The two inner pairs of wheels have very thin flanges, which, I am told, is the practice in full-scale locomotives which have to negotiate curves of small radius.

The pony wheels also have brass rims, but the spokes are moulded in plastic, thus obviating the necessity for split axles.

Transmission from the motor shaft to the driving wheels is by simple worm and pinion, the former being of steel and the latter machine-cut from hard brass.

The locomotive is finished in Great Western Railway green and black, and is now the property of Messrs. Beyer Peacock and Co. Ltd., who have kindly given me permission to give this illustrated description.

The model. The reproduction is only a little under full size.

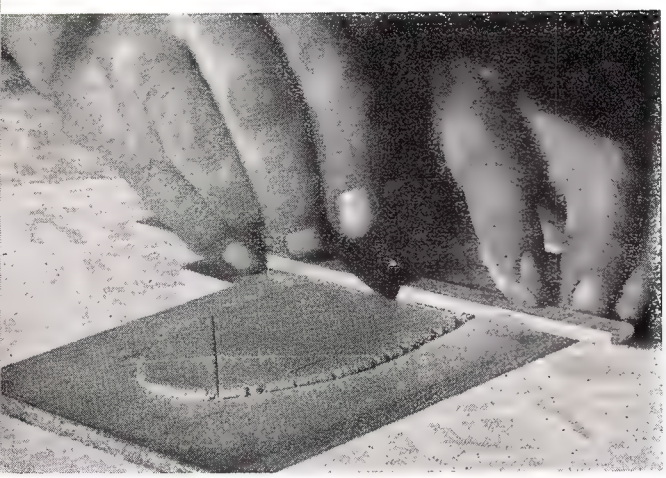


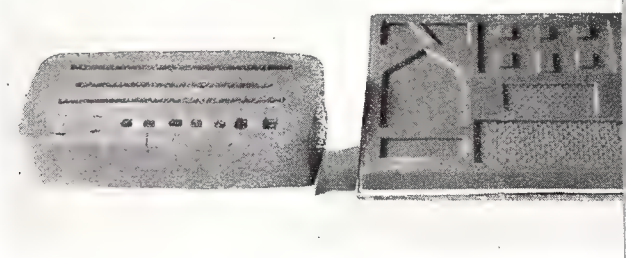
Creating Atmosphere

by C. R. Millen & A. C. Wehrli

SOME time ago I remarked to Charlie Millen that it was a pity there was not a quick and easy method of producing such items as cottages, walls, gateposts, baskets, etc., in quantity, in order to give the layout a more inhabited appearance, thus allowing more time for other essentials. He, in his usual manner, rose to the occasion, stating that it might be possible to produce these in plaster, using a rubber mould. He forthwith set to work on his idea, with excellent results ; and since this may prove useful to other modellers, we will endeavour to describe the process in its various stages.

It is best to begin with the making of a model having thin flat sides. A stone cottage falls into this category, and following is the method used to produce one. First the photo album was scrutinized for a suitable subject and a prototype found which looked simple. This was a cottage having a ground floor only, but since we were anxious to achieve the greatest utilization of a minimum number of sections the album was again thumbed to find a cottage with two storeys, but having a similar ground floor. This was not as difficult as we anticipated, as these buildings are very much to type, irrespective of the number of storeys. It became apparent that only one front, one end and one roof section would be necessary for the house proper, the outhouse requiring only one side and two ends and, of course, the roof, as illustrated. The reason for this is that the back of the house can quite well be the same as the front and one end identical to the other, and one side of the roof is a replica of its opposite. The chimney pots, since they require a slightly different treatment, will be dealt with in conjunction with gateposts, etc. The next step was to draw on squared paper the plan view of the various sections of the two-storey cottage.





Above : The completed moulds.

Left : Cutting the master for a cottage side.

Right : Cutting the master for a wall, stage 1. The Pyruma is grooved to represent stone.

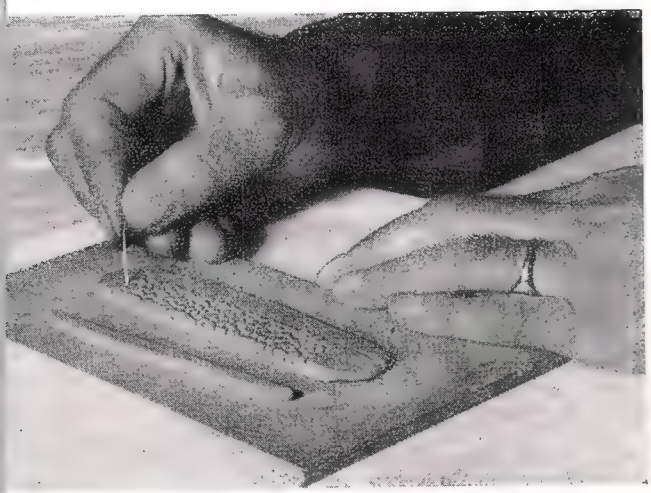
Extreme right : The wall master has been cut into halves, thus providing for accurate interlocking, and rejoined. New stones are now engraved.

These photographs show the effective use of moulded plaster accessories on the Balsa Magna Branch.

The reason for the use of the squared paper is to ensure that all sides are symmetrical, i.e. roof angles the same either side and wall ends perpendicular. Accuracy at this stage will ensure that the sections will assemble perfectly, and be interchangeable. The sections drawn are now cut out to form templates, window and door apertures being removed.

Making the Master

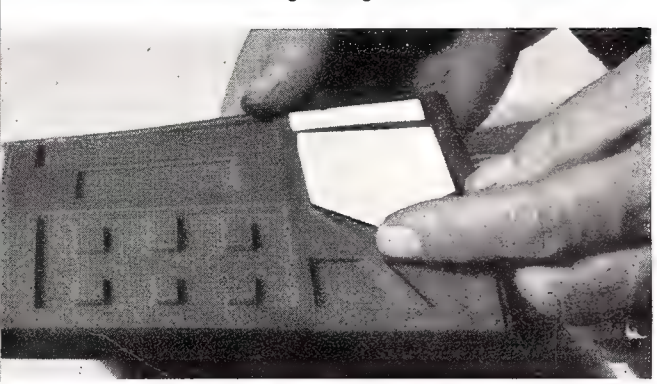
Taking next the making of the pattern, the material chosen was Pyruma, because all moisture can be driven off by baking, so avoiding the formation of air bubbles when pouring the mould material. Many modellers will already have their own ideas in ways of modelling Pyruma, but for the benefit of those who have not yet used this material the method we ourselves used might prove useful. The material should be used straight from the tin, as it will be found in an ideal condition, and will not need the addition of any water. A portion is then rolled into a ball, placed on a flat surface (such as a piece of smooth plywood) and rolled out to the required thickness, about $\frac{1}{4}$in. If it is found to incline to stick, the lightest dusting of french chalk or Alabastine will solve the problem. If in the case of the walls of the house it is desired to reproduce any markings, such as trowelling, this should be done now. The next step is to take one of the templates and place it over the Pyruma. This is then lightly scored with the aid of a razor blade and straight edge. The template is then peeled off, and the Pyruma cut to shape.



Removing castings from a deep mould.

Some may prefer to cut the Pyruma completely through while the template is still in position. The unwanted material is then removed, including window and door apertures. The master is then left undisturbed to dry for a period of about twelve hours, preferably in a warm place. All sections are treated in the above manner with the exception of the roof. The roof section should be rolled slightly thinner and cut to shape by the aid of the template, which is then removed, but the surrounding unwanted material is left in position to form support during subsequent marking. The tile effect was produced with the aid of a steel rule, this being pressed into the surface at an angle in an upward direction, at the correct spacing, to produce the horizontal lines ; the vertical markings for the individual tiles were made by marking with the blade of a small screwdriver. The unwanted surround is then removed, and the pattern left to dry as before. When all sections are complete, and have dried out naturally for the period stated, these should then be baked in a low oven for a short period to drive out all remaining moisture.

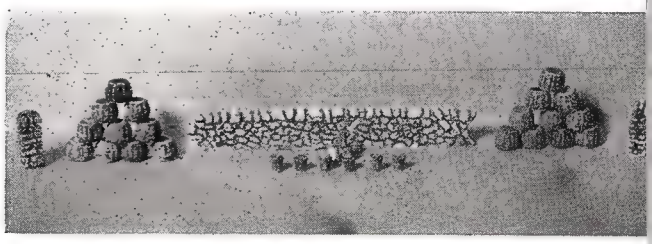
Removing castings from a flat mould.



Making the Mould

The materials for making the mould may be any of the flexible moulding compounds advertised, those used in this case being "Elastomould" or "Vynimould." Although only one master has been discussed, it will be appreciated that in cases where small items such as gateposts, lobster pots, tombstones, etc., are to be reproduced these can be grouped together in one mould, bearing in mind that if an original pattern or model is used all paint must be removed. This is necessary because the moulding compound is poured at 110° to 145° Centigrade, according to the grade or make of the moulding material ; therefore most paints would blister or melt and combine with the mould surface. The reproduction of plastic models should of course, never be attempted, as the hot compound would cause these to disintegrate.

Arrange your masters on a metal surface in a convenient group, the detailed side upwards. Now stick all these down with small beads of plasticine to prevent movement during pouring. If any other agent is used, avoid any adhesive that will bubble under heat. Place a strip of metal or cardboard around the group to form a containment wall for the compound and seal to base with plasticine or clay on the outside. The moulding compound is now cut into strips and diced, and enough is put into an old saucepan to cover the bottom to a depth of one inch. If a gas ring is used it is as well to use an asbestos mat. Gas should be kept low. The material should be stirred frequently to avoid burning, and when glutinous add



A selection of typical castings.

a handful of pieces from time to time until you have sufficient melted to the consistency of hot custard. Remove from heat, allow to stand for about thirty seconds for air bubbles to disperse, then pour into containment wall at one end or corner. The pouring must be steady, so that the material rises smoothly up the sides of the patterns. Continue pouring until material is about half an inch above the tallest pattern. Allow to cool naturally, when it will be noticed that, owing to contraction, there will be a hollow in the mould surface, which is inclined to cause a slight sagging when the mould is inverted for the casting process. To avoid this, while the containment wall is still *in situ* pour in some plaster of paris of a fairly loose consistency and tap surround until the plaster finds its own level. The plaster will set in fifteen minutes, when the containment wall may be removed, the plaster base lifted off, and the mould inverted and the masters removed, as in Fig. 3. The above refers to the removal of simple flat patterns. To remove masters with considerable undercuts, such as chimney-pots, etc., the mould may be cut at a convenient point, a rubber band being used if necessary to maintain the shape of the mould during casting.

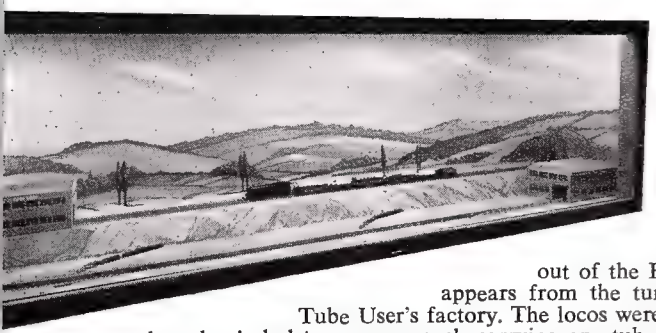
Balsa Magna churchyard is well filled with plaster castings, and surrounded by yet more in the shape of walls and gateposts. Note how the provision of memorials to long-past Balsa Magnaites (or should it be Magnaonians?) adds to the realism of the picture.

Making the casts

First place the plaster base for the mould on a level surface, and stand the mould in position upon it. For making the casts, ordinary dental plaster of paris may be used, the powder being mixed with water until the mixture is of a thin creamy consistency, always avoiding violent mixing, which will trap air bubbles. Spoon the mixture into the mould and puddle in with a matchstick to ensure that the plaster has occupied all corners and crevices ; remove surplus with a knife blade, then leave to set undisturbed for fifteen minutes, when the casts may be removed. The strength of the cast may be considerably increased by the addition of one of the plaster hardeners, such as Amax 109, which simply entails adding about half an ounce of this powder to every pound of plaster, bearing in mind that the setting time will then be thirty minutes.

A word concerning the cost of materials will no doubt be appreciated, the most expensive being the moulding compound. The prices range from 7/- to 12/6 per lb., but for the very small models associated with model railways one pound should suffice. It must be appreciated that this compound may be remelted repeatedly for making fresh moulds.

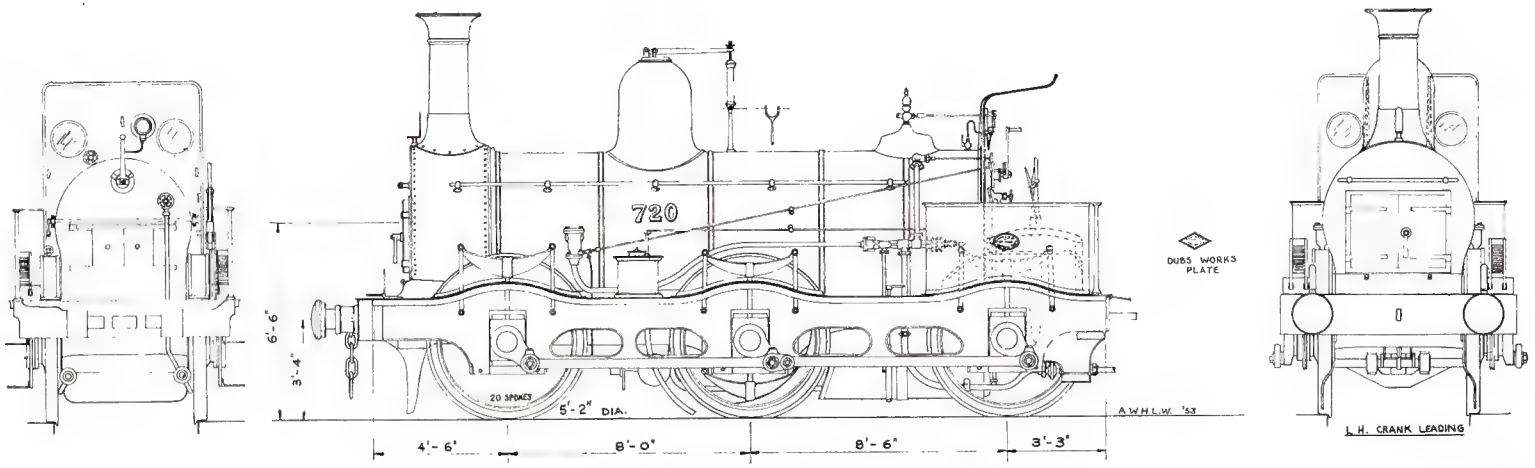
Dental plaster is used for our castings. This is dearer than common plaster of paris, but definitely superior. Bought in large tins from Boots, at about 1/6 per pound, it means that the total cost of plaster models is but a few pence each.

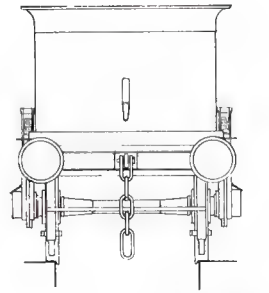


A NOVEL DISPLAY

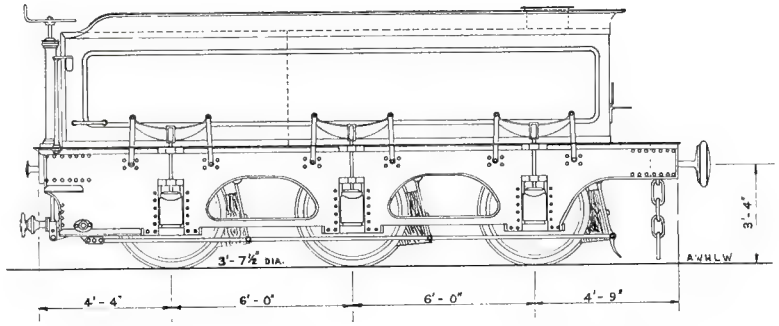
AN exhibit which attracted a lot of attention at the recent Packaging Exhibition was the model railway on the stand of the Flexile Metal Co. Ltd., collapsible tube manufacturers.

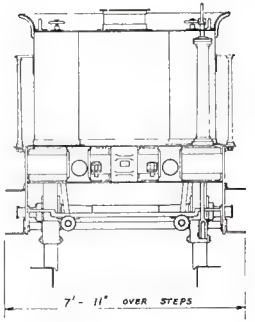
The layout, 12ft. by 6ft., was a double oval with the far side rising 1 in 60 to reach the higher level, and then falling 1 in 50 to pass under the high level and back to the Flexile factory at the low level. As will be seen from the photograph, the train appears out of the Flexile factory, enters the tunnel on the opposite side, reappears from the tunnel behind the Flexile factory and disappears into the Tube User's factory. The locos were two Hornby Dublo 2-6-4 tanks and the train consisted of three bogie bolster wagons each carrying one tube and two open flat trucks carrying three small tubes each, together with a goods brake, all Hornby Dublo. The locos were used alternately and during the eleven days of the exhibition covered approximately 255,000 feet between them, i.e. about twenty-four miles for each loco. They were oiled before each day's run and gave no trouble as long as the track was kept clean, particularly the curves and 1 in 60 rising gradient. The model was designed and built by Messrs. R. Wills, of Coulsdon, Surrey.





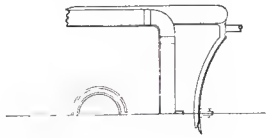
M.R. BRASS NUMERALS
Scale 8mm.=1ft.





MIDLAND RLY.
KIRTLEY 0-6-0

Drawing by A. W. H. L. WRIGHT



PLAN OF REAR END

SCALE 4mm.=1ft.

Full size for "OO."

MIDLAND RAILWAY

KIRTLEY 0-6-0 LOCOMOTIVES, 1863-1873

by A. W. H. L. Wright

FROM its earliest days in the 1850s until its absorption in the L.M.S.R. the Midland Railway handled all its freight traffic with six-coupled engines. The drawing shows one of the more notable classes constructed during the above period. This type, shown in its original condition, was Kirtley's second goods design, his first being a similar but slightly smaller 0-6-0. Certain engines in the series had a remarkably long life, the last one being broken up in February 1952 after eighty-two years' service.

The locos were built mostly by outside firms (details given below), though Derby constructed the first lot. The information given is not complete, since the writer unfortunately has not a complete M.R. list for the year 1870, but enough numbers are given to satisfy even the most ardent Kirtley fan.

M.R. Nos.	*Builder.*	*Date.*	*Works No.*
700– 719	Dubs & Co.	1869	311–330
720– 759	Neilson & Co.	1870	—
760– 779	Dubs & Co.	1870–71	337–356
860– 879	,,	,, ,,	442–461
930– 949	,,	1871	483–492
950– 989	,,	1872	553–592
1040–1069	,,	1873	657–686

Forty were constructed by the Vulcan Foundry, ten by Kitson, ten more by Fowler and twenty-six by Derby.

The leading dimensions were: cylinders 17in. x 24in.; wheels 5ft. 2in.; total wheelbase 16ft. 6in. Weight of engine and tender 75 tons 11 cwt. Boiler pressure 120lb. per square inch. T.E. = 13,100lb. Later on the cylinders were 18in. x 24in., the wheels 5ft. 3in. and the pressure 140lb. This increased the T.E. to 16,780lb.

The drawing depicts No. 720 of the Neilson set and modellers should note that the Dubs engines listed differed from the drawing in the following respects:

(a) The frames followed the chain line indicated and the footsteps were on a separate plate of the same shape as that shown, which was riveted on to the back edge of the outer frame. The slots in the frame were continuous from horn guide to horn guide and not webbed.

(b) The lifeguards were narrower and straight along their front edge.

(c) The buffers had no semi-circular metal strip round their heads.

(d) The injector delivery pipe carried straight on over the sandbox and then curved down and up again into the clackbox.

(e) The coupling rod ends were the square variety with cotters and set screws.

(f) An extra handrail on the cab splasher at the front was fitted. The shape was similar to the rear one.

(g) The sanding gear rod was six inches lower down, being below the injector delivery pipe.

(h) A Dubs maker's plate (diamond pattern) was used.

(i) The last lot, numbers 1040–1069, had Johnson chimneys and smokeboxes fitted. The double doors were replaced by the familiar round ones.

Having listed the deviations of these locos from that shown when new, perhaps a brief indication of the subsequent modifications will be useful.

S. W. Johnson fitted them with his design of boiler and smokebox, using his style of mountings. Some he fitted with his type of cab and this meant exposure of the rear springs, since the cab was narrower than the original. Those not supplied with Johnson's cabs got Deeley ones later and the original square splasher was retained (L.M.S.R. 22853 was one of these). Johnson fitted vacuum brakes, new drawgear and buffers, shifted the sandboxes to a less conspicuous position below the frames, and moved the numbers from the boiler to the cab side. The tenders had new rear buffer beams fitted and front sheets to prevent the coal finding its own way into the firebox.

Deeley fitted sandboxes to some in a rather strange place—outside the frames altogether, almost touching the coupling rods. This did not enhance their appearance, particularly when it was associated with his cab.

Fowler contented himself with fitting new smokeboxes with parallel chimneys and "dogged" doors to most of the remainder of the gallant band of 316. Some got Belpaire boilers with new mountings, and modern tenders, but not many.

To return to the engine in its original form, a few words on its more interesting points are necessary. One injector only was fitted; the R.H.S. had a cross-head-driven pump, the feed for which can be seen curving upwards just behind the reversing shaft balance weight. Two cast iron ribs (shown dotted on the end view) held the cab weatherboard upright and rigid. In addition to the cab fittings shown, one water gauge and three try-cocks were probably fitted. The feed heating valve on the pump water feed is an interesting feature. The firedoor handles were believed to have been similar to the modern L.M.S. style.

Until 1876 the colour scheme was dark green lined black and picked out in yellow or white, depending on the maker. The panel corners were the reversed kind similar to the G. & S.W.R. style of more recent times. From 1876 to 1883 emerald green was used, lined in black and yellow. After 1883 standard M.R. livery was used. Bright polished parts of the locos included the ring behind the smokebox, the whistle, cab window beadings, safety valve balances and support arm, coupling rods and the injector delivery pipe. The numerals were of the cut-out brass variety and a sketch showing these in more detail is appended.

THE MODEL RAILWAY

LIKE Gaul, the Model Railway Exhibition can be divided into three parts—static exhibits, working layouts and trade stands—and for the purposes of this preview I propose to deal with them in that order; but I should like to make it absolutely clear at the start that I do not intend to attempt the almost impossible task of cataloguing eveything at this, the largest model railway exhibition, even if space permitted.

As can be seen from the illustrations, a wide variety of models will be on show on the static stands. For convenience, the exhibits are displayed under the old groups, with special free-lance narrow gauge sectors, and visiting societies are allocated space for their own stands. This year there will also be a showcase of models from the wonderful " O " gauge Midland Railway layout in Derby Museum. This should most certainly be seen by every visitor to the exhibition as it is a wonderful display.

As well as these fine models, there are always a number of special " how to do it " displays, which tell you how to set about building a model, and—my favourite type of exhibit—small sections of portable layouts. When they are well done, as they usually are, they are worth hours of close study. These layouts have the advantage that one can see them more closely than the working systems, where crush barriers must keep the visitor some distance away.

In recent years the working layouts have come in for a lot of criticism, most of it, in my opinion, unjustified. There is a special breed of gremlins who have their homes in the lower floor and who disguise themselves as clouds of dust particles and settle on the layouts, bringing premature grey hairs to the operators' heads, so for this reason Major Provo's new " OOO " layout will be found this year in the upper hall. This will be a point-to-point system, and there will be many interesting new models to be seen.

Down below, three old favourites will be present, the British Railways exhibition layout, which always puts on a fine show, Bill Banwell's Maycroft Garden Railway, this year arranged as an L-shaped point-to-point system, and the Gauge " 1 " Association's communal system, once again arranged as a terminus with a hidden marshalling yard behind their display stand. The narrow gauge " ant hill," which made its debut last year, will return in a modified form, and a newcomer in the shape of a rather ingenious point-to-point " OO " system will provide another interesting display.

Certainly there will be ample opportunity for the devotees of strict prototype and tail-chasing methods of operation to see their pet systems in action. Much as I prefer timetable operation, I must admit that a continuous run holds the crowd's attention, and is much more likely to gain converts to the hobby. You don't start tyros on the advanced stuff, whether it is model railways or music!

Of special interest to beginners are the Hornby Dublo and Trix stands. On these demonstration layouts all the latest products will be seen, and the operation, if a trifle spectacular at times, will be as faultless as ever.

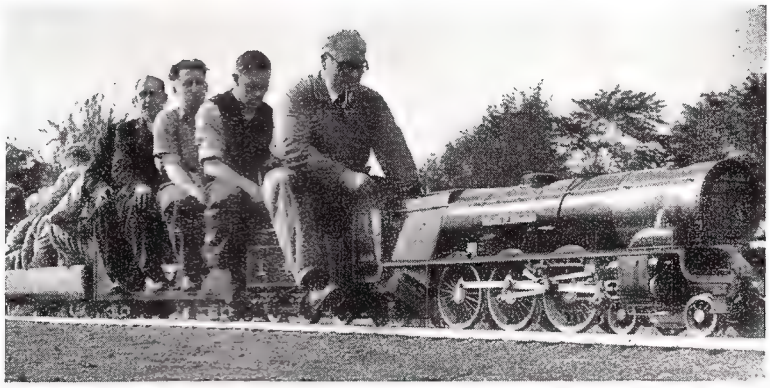
Having arrived at the trade stands, we come to the final part of our survey. All the leading manufac-

Highland Railway Jones 4-4-0 No. 101 in " O " gauge, built and exhibited by E. Bankins.

EXHIBITION

CENTRAL HALL WESTMINSTER

April 12 to April 16 (inclusive)

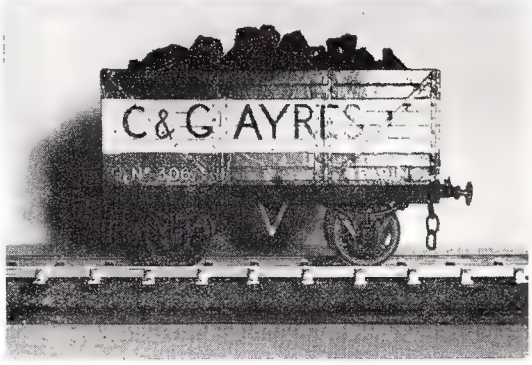


This fine model of an ex-L.M.S. 8F " Duchess of Brighouse " built by W. Douglas Miller will form the centre-piece of the exhibition.

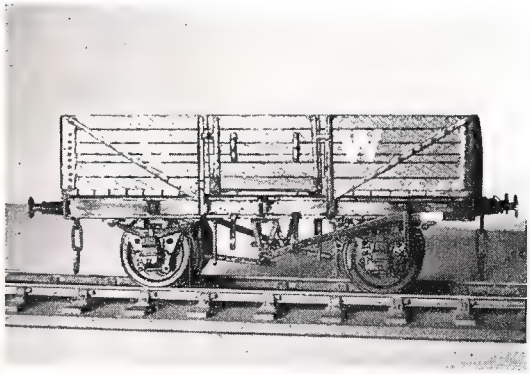
turers will either be exhibiting or their products will be on show on a retailer's stand, and it is therefore possible to examine whatever you require for your layout at the Central Hall. As usual, there are many new items promised, and these will be reviewed in Trade Window after the exhibition.

As I said at the beginning, this is not a complete catalogue. Its main purpose is to whet the appetite, for unless you attend the Model Railway Exhibition in person you cannot possibly appreciate it to the full. It is a time to strengthen one's contacts with the hobby away from one's immediate circle of friends in the local club. Again, only at an exhibition can one really meet the trade at large on a personal basis ; such contacts are invaluable in so personal a business as ours. None of this can be done merely by reading about the show in your favourite magazine, and so I would earnestly advise every reader who can possibly do so to pay at least one visit to the Central Hall this Easter week. No matter how long he can stay it will still not be long enough. I know that despite the fact that I have spent every available moment at every post-war exhibition, when the time comes to break the exhibition up there are still many models I should like to inspect more closely, while as for my friends, our usual parting is the time-honoured phrase " See you at the next show—if not before."

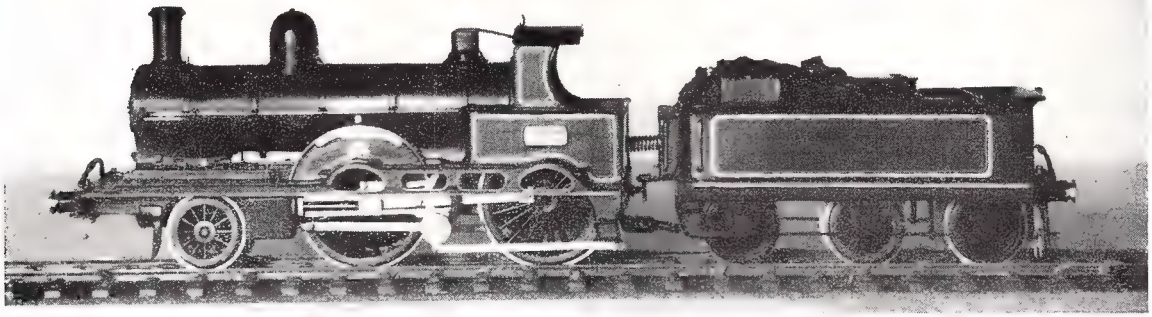
C. J. FREEZER.



" 1 " gauge private owner wagon, built and exhibited by Mrs. I. A. Roberts.



Fine scale " O " gauge G.W. open wagon, built and exhibited by R. E. Gilbert.



SOME MODELS THAT WILL APPEAR AT THE EXHIBITION

This page, from top to bottom

"OO" gauge L.N.W.R. Web compound 2-2-2-0 Teutonic class "Jennie Deanes," with tender drive. This model was completed in six weeks. Built and exhibited by J. Lennard.

"OO" gauge L.S.W.R. ten-ton van and unpainted luggage van, built and exhibited by D. Curtis.

"OO" gauge Caledonian Railway 55 class 4-6-0, built by P. D. James and exhibited on the Historical Model Railway Society's stand.

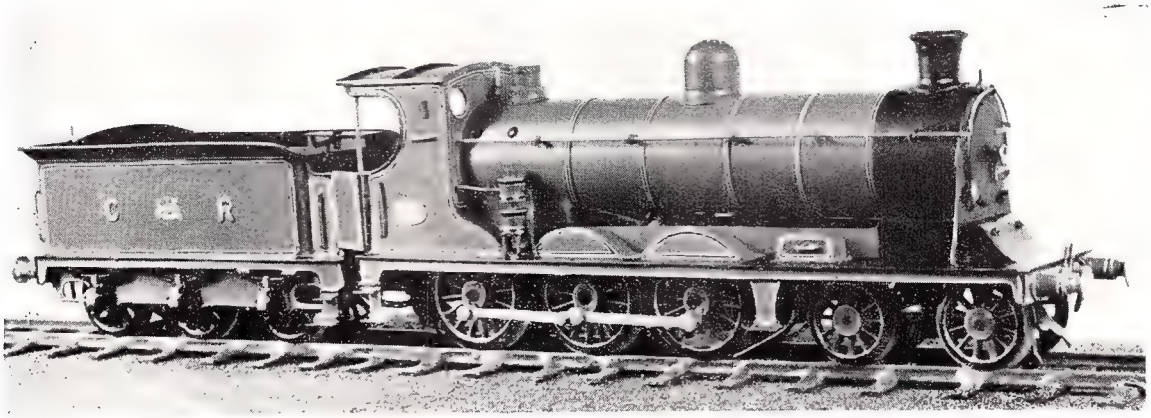
Facing page from top to bottom

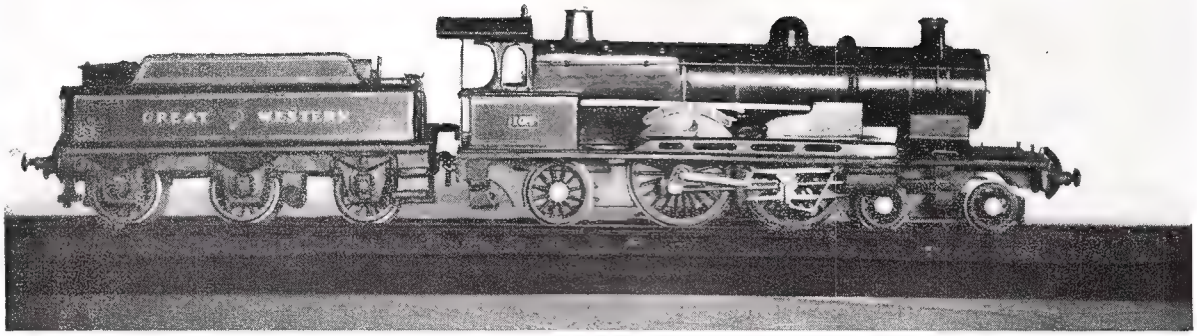
"OO" gauge G.W.R. De Glehn compound Atlantic No. 104 "Alliance." Builder unknown. Exhibited by J. G. Deas.

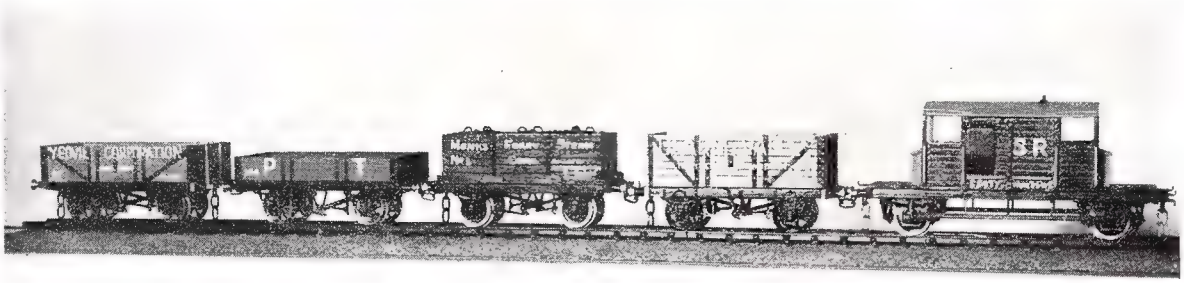
Private owner wagons and S.R. brake in "OO" gauge, built and exhibited by J. J. Davis.

"OO" gauge S.R. vans built by A. G. Thomas, exhibited by A. C. Smith.

4mm. scale 10mm. gauge free-lance narrow gauge loco and coach, built and exhibited by A. C. Wherli and C. H. Millen.




GREAT WESTERN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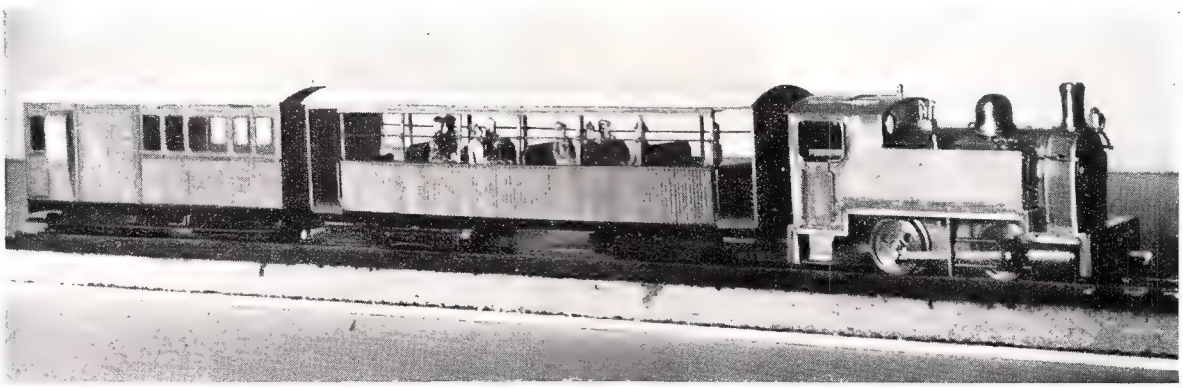


A layout like this may be a pipe dream to many young enthusiasts, but a little determination can start you on the road to achieving your desired goal.

PERSEVERE

An open letter especially to young readers about to begin

by E. Stanley Peters

YOU are interested in model railways? Good. This is a favourable sign, for aeroplanes and motor-cars are so much cleaner and more exciting in some ways, but not in all! But you are up against two difficulties? I can guess what these are: first, finance; second, room. Of course, if you are one of those fortunate boys whose parents buy them a £20 set of proprietary trains and give them a special room, you can skip this. But if you are not in this category I will deal with these troubles in reverse order. Let us then take the second first, room. This is a difficulty, but not nearly as great a one as it used to be. When I was young there was no such thing as "OO." There are some wonderful suggestions for 6ft. x 4ft. nowadays, both in this magazine and in club circles. Then we come to finance. If I may say so, this is rather an exciting difficulty. It is, you know, exciting to have to wait for something, or for lack of cash to see it grow very slowly. It is not half so thrilling to be able to buy everything straight off. "Easy come, easy go." You will not lightly put aside something which has taken you months to build in the cheapest way possible and has taken many hard-saved pennies for the parts that must be bought. You can cut down to a bare minimum of expense. Don't be scared off by "super-detail" models you see at exhibitions and clubs or in this journal or shop windows. Don't give way to the feeling that you cannot possibly do anything like that. Of course you cannot—yet. Take coaches, for example. You may see a handmade Pullman with tables, lamps, even perhaps plates and cups and saucers, and underneath may be complete brake gear, dynamo and so forth—very beautiful craftsmanship, no doubt. But a coach can be made from a length of suitable sized balsa wood carefully shaped and a pair of lithographed sides stuck on, small strips for the solebars, battery boxes, etc., and all you need to find the cash for will be a pair of bogies, buffers and some kind of coupling. It is far better to have a few coaches and vans of this kind than to give up, or to wait for occasional presents of proprietary articles. Try to pick up or borrow (and return!) pre-war books by the Rev. Edward Beal, in which he described the use of all kinds of money-saving odds and ends. This may not be good for the trade at the moment, but in the long run it is better for them that you remain an enthusiast, building your own things, than if you gave up the hobby altogether.

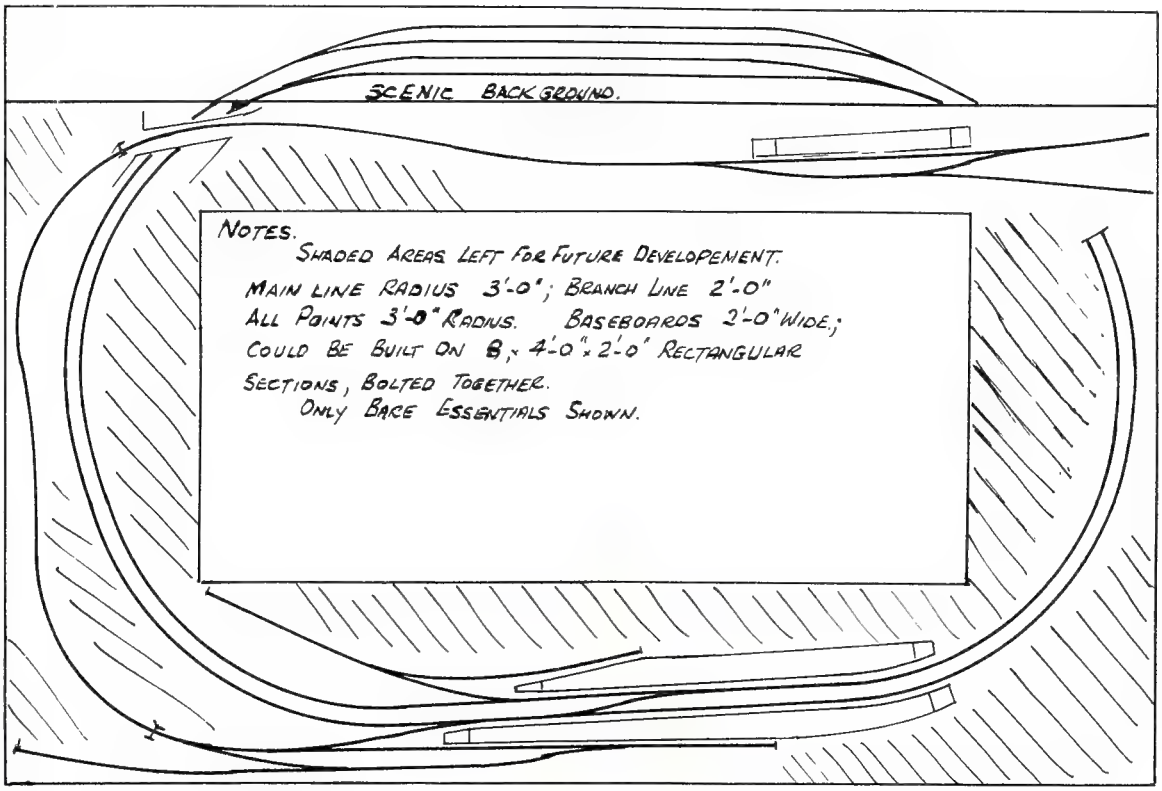
Now for locos. First, don't be discouraged by the terribly complicated electrical systems and wiring diagrams which turn up from time to time in the press. They are not meant for you. They are intended for those who have mastered the simpler systems and are looking out for complicated ones which will help them deal with difficult traffic problems. Electrifying your line is a fairly costly item. Why not start off with "push and pull"? Never mind about the enthusiast who is horrified at your touching a loco with your hand. If he is sufficiently disgusted he will buy you all the necessary electrical apparatus and wire it for you. Lay down plain (but good) track, making provision for later electrification when your pocket money can run to it. Remember that with a little skill and patience you can make up track for about half the cost of the ready-made article. Points call for more patience and care—look up kits available. All you need is a good file or two and a soldering iron. Beware of those horrible lead alloy castings, they call for some skill and experience in soldering.

Finally, locos. You can manage with a cast body and a plain chassis to fit it. It is not a difficult matter to assemble these with screws, leaving provision for the later addition of a motor. In my opinion it is far better to start off with this than to be reduced to exasperation by a cheap motor which refuses to run slowly and which makes a noise which can be heard all over the house. Leave provision for the things you would like to have later on, but don't give up or confine your modelling to dreamland. Do something and do it now!

There is reason in the "old hands'" advice to "get something running." If you do not the chances are that you will give up the hobby because nothing ties you to it. Later on, of course, you will wish to improve on the bare bones of the layout which I hope my suggestions will lead you to build. You will probably then not care to have a block of wood with paper sides as a coach. But this is much better than merely dreaming over this monthly RAILWAY MODELLER. If you can run to the cost of a coach kit, so much the better. If you can afford electrification, so much the better. But you can learn a very great deal from a simple start, leading a train round a track with your hands. So when you do come to electrifying the line there will be very much less chance of your being exasperated by "flying starts" and all sorts of little faults which develop even in the best regulated line. Your locos and rolling stock too will be well "run in" by hand with no new and stiff bearings and so will start smoothly and realistically. You will by then have quite a nice little collection of home-made coaches and vans which will be worth handling, and quite a lot of practical knowledge.

Layouts for the Modeller No. 68

WITH ROOM TO SPARE


SCENIC BACKGROUND.
NOTES.
SHADED AREAS LEFT FOR FUTURE DEVELOPEMENT.
MAIN LINE RADIUS 3'-0"; BRANCH LINE 2'-0"
ALL POINTS 3'-0" RADIUS. BASEBOARDS 2'-0" WIDE;
COULD BE BUILT ON 8, x 4'-0" x 2'-0" RECTANGULAR
SECTIONS, BOLTED TOGETHER.
ONLY BARE ESSENTIALS SHOWN.

TO many people a clear area 12ft. x 8ft. available for a model railway seems to offer no problems whatever, yet such a room simply bristles with trouble. The fellow with a restricted site has one big problem: how to make the best use of the space available; while the modeller with a large room free has not only to decide between half a dozen possible plans but to find the material with which to build the layout. His baseboard alone may well cost more than the entire layout of his "less fortunate" colleague.

The problem is intensified for a beginner who has no real idea of the particular branches of the hobby he likes best of all. As a result, he often prepares a design which incorporates everything except the proverbial kitchen sink, *and which would require the resources of a large club to build, maintain and operate.* For such people the present layout has been prepared. It consists of a basic double track oval with a junction station and hidden loops for timetable operation, and a high level branch. Baseboard construction is simple, as the only gradients are in the upward direction, and trackwork is straightforward, presenting no undue difficulties. More important still, by laying one road of the double track first, some sort of running can be indulged in quite quickly. This scheme will suit the basic needs of almost anyone, as any sort of train can be run, but sufficient areas have been left blank to allow for almost any sort of future development.

We are not making any suggestions. Once you have built the layout to the present stage—this will take at least a year for the average modeller—you will have accumulated enough ideas to fill all these empty areas ten times over.

Prototype of the Month

BITTON

by C. Gordon Watford

AN attractive prototype from which to construct a model, Bitton is located some six miles north-west of Bath (Green Park), on the former Midland Railway main line from Bath to the north. This line, which leaves the Bristol—Gloucester mail line at Mangotsfield Junction, is double track throughout, and would thus suit the modeller interested in timetable working, as the station layout at Bitton could be modelled along one side of the room, in the form of the principal station on a continuous-run layout.

The station buildings are typical of the old Midland company, and would certainly look very convincing if modelled with reasonable care. Construction would be in card, reinforced inside at the corners by $\frac{1}{4}$in. stripwood. The walls of the prototype are in stone, so the appropriate Modelcraft building paper could be used for the model, making a change from the more widely used brick paper. The ornate barge-boards would be cut from best quality artist's card, using a sharp knife to ensure a clean finish. The goods shed would be built up in a similar manner.

The signal box is an excellent example of a small timber-built Midland Railway box. The way in which it is built into the hillside adds charm to an already charming building, and a carefully constructed model would go a long way to capturing the Midland Railway atmosphere of the station as a whole.

At the south end of the station the line is carried over a main road by means of a plate girder bridge. I think that the best method of modelling this bridge would be to use brass sheet for the side plates, and solder on the vertical T-irons, which can be

Top : Shelter, Bitton.
Centre : Goods shed, Bitton.
Bottom : Road bridge, Bitton.

(M.R.)

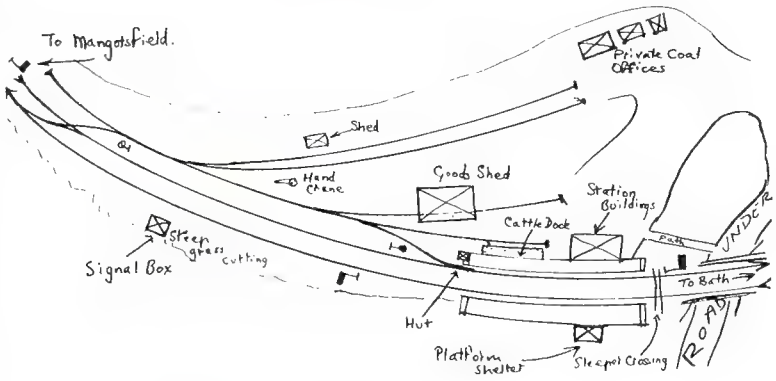
Bitton station buildings.

bought quite cheaply from most model railway shops as wagon strapping. For the vertical posts of the handrails, thin strips of brass could be employed, to which thick brass wire could be soldered to form the actual handrails. The stone wingwalls could be built in wood and card, and would support the track-bed, Modelcraft old stone paper being used to cover the card walls.

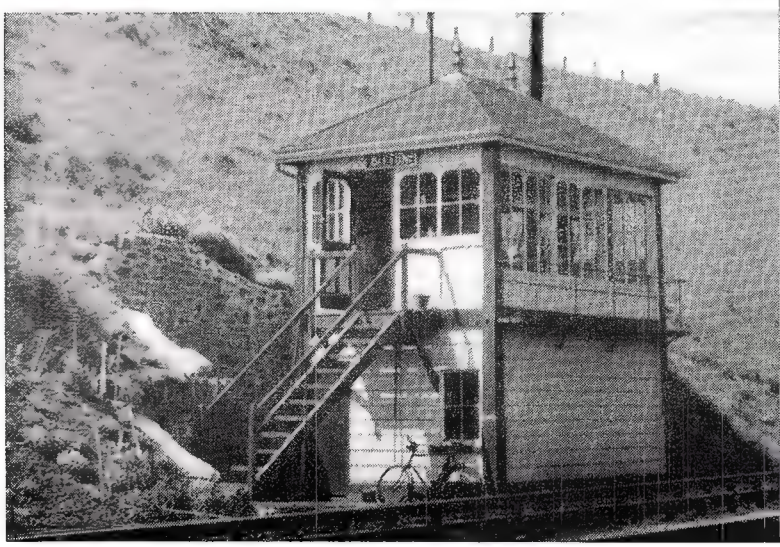
As can be seen from the diagram, the station offers considerable freight accommodation, and a pick-up freight train could be made to engage in some very interesting shunting operations.

The station is best suited to a location in one corner of a double-track continuous type of layout. The Bath end of Bitton station would be straightened out slightly, and the other end would curve sharply round the room to a hidden set of loops and sidings along the opposite wall, the double-track main line skirting these sidings and going round the room to join up again at the Bath end of Bitton.

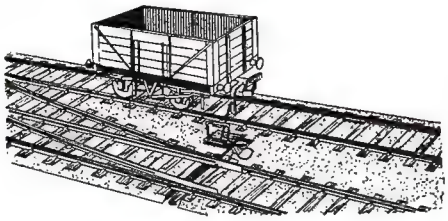
Main line passenger trains would presumably be the order of the day, and stopping trains could consist of two-coach "B" sets in the charge of L.M.S. 2-6-2 tanks. Through express trains, which include the Pines Express, would comprise up to eleven main line coaches, and would be hauled by anything from a compound to a Class 5. Freight traffic is chiefly wood pulp in and paper out, both in connection with the nearby paper mills. Through freights consist of coal, and all are hauled by a variety of locos, but in particular the 4F class 0-6-0 locos.



Bitton signal cabin.



Peco Topics



HOW TO LAY SPIKED FLAT-BOTTOM TRACK

By S. C. Pritchard

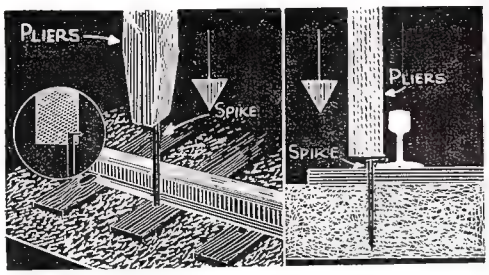


Fig. 1. Inserting spikes in baseboard.

SPIKED flat-bottom track is the simplest, cheapest and quickest method of track laying, whether for model or prototype. The components are few: rail, spikes and sleepers, with ballast, to use a phrase popularized by motor manufacturers, an optional extra.

The *new* Peco spike has been specially designed to enable even the rawest beginner to produce first-class track with the simplest of tools. It is made from 22 gauge *square* wire to prevent it turning in the baseboard after it has been inserted, and has a flat head for maximum clearance and a fine point for easy penetration. It is ½in. long, to enable it to get a firm grip in our recommended ½in. softboard baseboards, but can also be used with timber. *We would emphasize that hardboard and chipboard baseboards are not suitable for use with spiked track, due to the difficulty of inserting any form of fine pin.* Spikes are sold in packets of 1oz., at 2s. 4d.

We have also introduced, for use with spiked track, a $\frac{1}{32}$in. thick sleeper, in packets of 200, which further increases the economy of spiked track. These sleepers should be used with the Pecoway ballast underlay or Peco loose ballast.

The secret of spiking track is that the spikes are *pushed* into the baseboard with a pair of small flat-nosed pliers. Grip the head of the spike as shown in the inset of Fig. 1, insert in the hole in the sleeper and push steadily down until the pliers foul the head of the rail. Let go the spike, close the pliers and push downward with their nose. This method is quick, sure and silent, important factors when the layout is situated in an upper room or flat.

Track spiked at every third sleeper is quite strong enough for all normal usage, and so for economy and speed the intervening spikes may be omitted. If this is done the intervening sleepers should be held in place by a dab of glue.

The procedure for laying straight and curved track is identical. One rail is laid first of all, either to a straight-edge or curved template, and the sleepers are aligned with the rail and spaced with a simple gauge.

Fig. 2. Jig for sleeper spacing.

Fig. 2 shows a jig which will space three sleepers simultaneously. It should be made from any convenient piece of thin material, stout card being eminently suitable. Once the first rail is in place, the second should be laid, the pre-punched holes in the sleepers determining the gauge, but a Peco Rologauge may be used to check. Joints should be made with Peco rail joiners, taking care to have a sleeper directly under the joint so that the joiner can be pinned down through the hole provided.

The most convenient form of ballast for $\frac{1}{32}$in. sleepers are the ballast underlays, as these can be laid, roughened and stained before the track is made, whereas with loose ballast it is necessary to glue the sleepers in place at the same time as the ballast, before the rails are laid.

The $\frac{1}{16}$in. thick FB/A4 sleepers, in conjunction with Peco ballast units, can be used for spiked track if preferred.

For centre-third track, use ordinary running rail, spiked to every third sleeper. The holes for this purpose should be pierced with a sharp-pointed tool after laying the track. The Rologauge will align this rail automatically. Outside-third rail should be laid using Peco conductor rail and conductor rail chairs, the Rologauge once more locating this rail to B.R.M.S.B. standards.

For Trix, Tri-ang, Rovex and any other proprietary system with deep flanges, HI section rail should be used instead of scale F.B. rail.

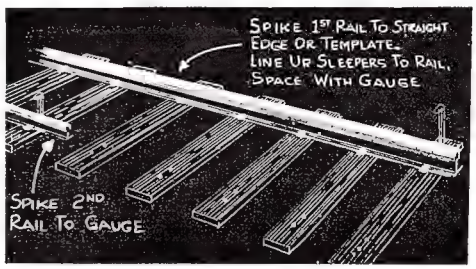
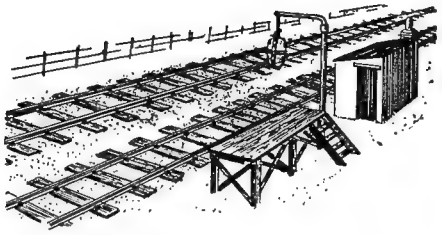


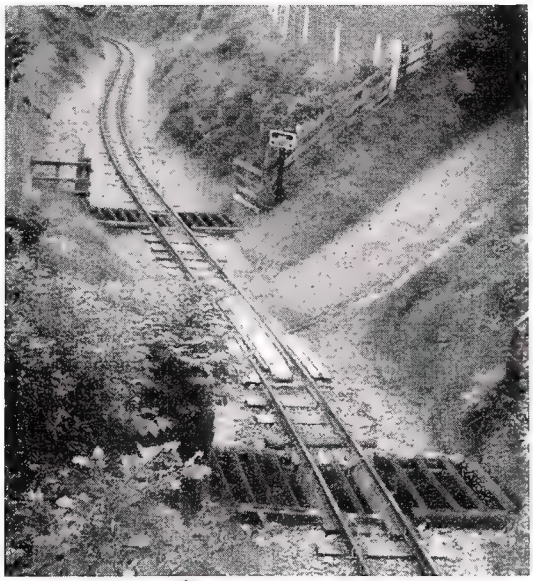
Fig. 3. Laying spiked track.

READERS' LETTERS



This space is reserved for the free exchange of readers' ideas and opinions

VALE OF RHEIDOL LIGHT RAILWAY



I was most interested to see that Mr. Hancock, whose work I admire very much, had covered similar ground to myself with his camera.

Last year, before the railway opened, I measured and photographed most of the features that go to make the individuality of this railway, and I enclose a pair of photographs which have some bearing on Mr. Hancock's culvert crossing.

The same brickwork with variations in the bridging is used at crossings all the way up the valley to prevent cattle and sheep straying on to the line. Nevertheless, I have a photograph of sheep enjoying a siesta on the nice sun-warmed rails.

Birmingham. C. C. GREEN.

Our faith in cattle guards is shaken, as we read in the local paper that Dartmoor ponies have taken to rolling over them.—ED.

WE ARE DISTURBED

Mr. Stanley Peters in his letter in the March RAILWAY MODELLER has fallen into an all-too-common trap in assuming that the current rating of the fuse has anything to do with the lethal properties of an electric supply.

The current required to kill is considerably less than two amps, and thus well within the capacity of any mains circuit.

Ohm's Law states briefly that voltage = current × resistance, and the question of how big an electric shock is received from a mains supply depends therefore on the resistance from where the live wire touches the body to earth or the neutral wire. The lower this resistance the greater the current and the bigger the shock. This resistance varies considerably with different parts of the body, if it is wet or dry, and the type of shoes worn, floor, etc. For example, I have received a far worse shock through wet hands on a thirty-volt supply than from a 300-volt live wire and standing on a dry wood floor.

Mr. Peters is, however, quite correct in saying that a transformer should be protected by a low-rated mains fuse, but for a different reason, namely fire risk. If the insulation between some of the turns breaks down in a transformer a short circuited winding will be formed. This will pass a very heavy current. The whole transformer gets hot very quickly and if not noticed or not protected with a proper fuse will soon ignite anything that is handy.

Belfast. F. ROWBOTHAM.

HELP WANTED

I am planning a model, in fine scale gauge "O," of the one-time branch line which ran between Garden Arms and Bishop's Castle in Salop, and I am wondering if you can tell me where I can obtain details of the track layout of Bishop's Castle station.

I have obtained one or two notes and photographs of the line from the book *Service Suspended,* but have found no reference to the old railway elsewhere.

Fairfield, Chapel Road, G. B. SWANN.
Alderley Edge, Cheshire.

Has any reader details of this delightful but obscure line ? If so will he contact Mr. Swann ?—ED.

DECEMBER COVER SHOT

Answering Mr. W. Loch Kidston's letter, the family connection with polar regions, *not* as suggested with Titus, has enabled us to breed hardy stock cattle which, unlike the Scots beasts, are able to *enjoy* the cold weather which has hit the Chalke Valley Branch. A new development in plastics, *not* lead as suggested by C.J.F., is partly responsible.

Incidentally, we of the Coombe Bissett line had difficulty in translating the term byre, as *we* call *our* cow-sheds by their proper name.

In addition, the cow in the picture, one "Plassie," refuses to move from the spot, as she has an inborn love of locos, and is afraid of missing any that pass on the Bishopstone Branch portrayed.

Coombe Bissett. CHARLES SLATER.

I was astonished, in view of the criticism of our December cover shot, to see in the snows early this year a small herd of cows contentedly grazing in a

snow-covered field on the outskirts of Seaton. It appears that there still is a prototype for everything!

Before further corrections come in, I would like to point out that Cherry-Gerrard in *The Worst Journey in the World* repeatedly refers to Oates of Scott's ill-fated expedition as Titus.—ED.

SPEED ON THE NORTH DEVONSHIRE

I beg to point out that the G.W.R. No. 7013 "Bristol Castle" in the exploit on page 64 of the March issue cannot be "the modern loco of this number, not the old 4082," as that engine when numbered 7013 was never painted dark green or adorned with the B.R. emblem. It was one of the batch turned out in apple-green with the words "British Railways" in Gill Sans, and remained so until renumbered. The age of the locomotive, thus revealed, reflects even greater credit, and it is not surprising that those concerned became so excited as not to remember, when they came to record their experience, which one it was.

Bovey Tracey. R. P. WALFORD.

THE MYSTERY DEEPENS

With reference to the letter in the March RAILWAY MODELLER appertaining to 24mm. wheels with eighteen spokes, we have in stock wheels of this size and the spoke number is eighteen. This was never noticed until reading this letter, so we checked up on the old stock of Romford 24mm. wheels and what did we find? *Twenty spokes.*

The mystery deepens. Have Romford produced a new die? We cannot say, but we get our wheels (ordered as Romford) from a wholesale house and in our last consignment all have eighteen spokes.

Halfone Models, Manchester. ARTHUR PEAKE.

BOOK REVIEWS

HOW TO WIRE YOUR MODEL RAILROAD. Linn H. Westcott. (Kalmbach Publications, Milwaukee, U.S.A. British agents, Bradshaw Model Products. Price in U.K. 14s. 9d.)

If you require a book that tells you all you need to know in order to wire a two-rail model railway, look no farther. This excellent volume tells all, in simple straightforward language. We are sure that the veriest tyro, who cannot tell a volt from an ampere, and never knows what his ohms are going to do, will, after reading this, be able to wire his layout and get his trains to run as he wishes.

Whenever the use of colour will improve the clarity of the diagram this has been done, while the many diagrams cover all common types of track formation. Cab control and pulse power are dealt with in detail.

We are particularly pleased to see that this valuable textbook is now readily available in Britain, and heartily recommend it to all our readers.

THE CHAIRWAY MANUAL. R. D. Dimmock. (A.B.C., 1s. 6d.)

This is a useful practical handbook explaining the methods used when laying A.B.C. "Chairway" track. Brief notes on two-rail electrification and point operation are included.

MODELLING THE OLD TIME RAILWAYS. Edward Beal. (Adam and Charles Black, 15s.)

Let us say first of all that this book is definitely vintage Beal, full of delightful drawings that will provide inspiration to all modellers, whether specifically modelling pre-group or not. In fact, the only point about this book that causes us any misgivings is that the title, though strictly accurate, may cause many people to ignore it on the grounds that they are interested only in modern equipment. This would be very wrong, for many of the lineside features illustrated are still in existence today, and as, in our opinion, nothing gives more realism to a model railway than a judicious selection of equipment from all parts of the railway's history, we consider that everyone could benefit by study of this fine book.

An excellent feature of Mr. Beal's latest work is the arrangement of contents. Beginning with a general picture of the period, he goes from there to the civil engineering work and thence to the track, which, as many of our readers will know, has changed in recent years in certain respects. He then goes on to locomotives, station buildings, and individual features that comprise a model railway, and concludes with a chapter on layout planning. This is a complete reversal of the usual practice, which normally begins with the layout plan and adds the other parts afterwards. As it is our experience that on a historical line the layout must be designed to show to best advantage the features the owner is most interested in, we find this change a welcome and refreshing one. On a purely personal note, we are interested to see Mr. Beal's development of Foxfield, a prototype published in the RAILWAY MODELLER, as a 4mm. layout in a moderately large room.

The book is at all times related very closely to the prototype and does assume that the reader has some knowledge of the common terms and practices of our hobby. With this one proviso in mind, it deals with what is generally regarded as a somewhat difficult subject in such a way as to make it completely intelligible to the comparative beginner. We feel sure that it will do much to foster the craft of modelling historical prototypes.

CATALOGUES RECEIVED

Eames (6d.)

This very useful booklet lists the main conversion services for proprietary equipment offered by this concern, a list that runs into dozens of possible arrangements. Also included are the Eames ready-converted locomotives and a useful range of components and materials for the home constructor.

Exley (1/9)

The spring edition of the Exley catalogue contains many new illustrations, and full details of the latest additions to the range of standard coaches.

We regret that in our review of "*'OO' Gauge Layout and Design*" last month the price was stated to be 8s. 6d. This should have read 3s. 6d.

CLUB NOTICE BOARD

featuring popular personalities and society news

Personality Parade No. 40

F. A. (Fanny) Nutter

Model Railway Club, North London, S.M.E., Gauge "1" Association.

"Fanny" Nutter has been a keen modeller since before the first world war, when he began in his chosen scale, "1" gauge, though his serious work commenced in the 1920s when, in conjunction with a friend, he built a communal gauge "1" layout which survived until 1934.

After the second world war he joined the North London S.M.E., and assisted in the construction of the club's first two-rail exhibition layout, one of the first of such layouts to be constructed in this country. He was a founder member of the Gauge "1" Model Railway Association and our photograph was taken at a garden party of the association and, as his many friends will know, is typical.

When the Gauge "1" Association affiliated to the Model Railway Club, "Fanny" joined the senior club, and is now deputy chairman. He can usually be found somewhere near the Gauge "1" stand during the Model Railway Exhibition, and in recent years has provided in his notorious jeep the transport for the Model Railway Club's exhibits at the Manchester exhibition.

His future plans are the construction of rolling stock and accessories for the gauge "1" railway that will grace the dream cottage of his advancing years.

NOTES AND NEWS

Copy for these columns must be received five weeks before publication.

THE WESTERN MODEL RAILWAY SOCIETY

Meetings are held on Thursday evenings. The society is constructing a two-rail "OO" layout, and the first section is available for running. New members will be welcome. For further details please apply to the secretary, 13 Eastbourne Road, Chiswick, W.14.

THE LUTON AND DISTRICT MINIATURE RAILWAY CLUB

The above club has now moved to more permanent premises, No. 2 Napier Road, Luton (club entrance in Western Road). Meetings will now be held on Monday, Wednesday and Friday nights. Time of opening 7.30.

Further inquiries welcomed. Apply J. W. Lewin, Plot 653, Hill Rise, Sundon Park Estate, Luton (Hon. Secretary).

HODDESDON AND DISTRICT MODEL RAILWAY SOCIETY

The above society came into being on February 2, 1955, after a meeting of model railway enthusiasts from the Ware, Hoddesdon, Cheshunt and Nazeing districts.

Anyone interested—especially potential members—will be welcomed at the society's headquarters at Broxbourne and Hoddesdon Branch of Toc H (by kind permission of the house committee), 99/101 High Street, Hoddesdon, Herts—opposite the Clock Tower, Hoddesdon.

Meetings take place on alternate Wednesdays at 7.45 p.m. for 8 p.m. at the society's headquarters.

Further information will be gladly supplied by the hon. secretary, Peter Fieldhouse, "Aysbrook," Middle Street, Nazeing, Essex (telephone Nazeing 2185).

TALYLLYN RAILWAY PRESERVATION SOCIETY

The London Area are holding their spring reunion on April 23 at the Kingsley Hotel, Bloomsbury Way, W.C.1, commencing at 3 p.m. with an informal meeting. During the evening the latest filmstrips, colour transparencies and films will be shown. Tea and/or dinner will be available in the hotel if booked through the area secretary, T. W. Robertson, 23 Portway, Ewell. All members, prospective members and friends will be welcome.

LANCASTER RAILWAY CLUB

A club, to be known as the "Lancaster Railway Club," has been formed to bring together all in the district who are interested in railways, full size and model. Anyone interested is invited to write to R. W. Crafter, 55 St. Oswald Street, Lancaster, who will be pleased to give any further information.

ROTHERHAM MODEL RAILWAY CLUB

The first annual general meeting of the above club will take place in Room 2, Temperance Hall, Wellgate, Rotherham, on Wednesday, April 13, 1955, at 7 p.m.

New members always welcome.

Secretary: P. C. Thurlow, Esq., "Walden," 7 Larch Avenue, Bramley, nr. Rotherham, Yorks.

KIRKINTILLOCH MODEL MAKERS' CLUB

Meetings are held every Wednesday in the clubroom at T. and D. Cruickshanks, blacksmiths, Luggiebank Road, Hillhead, Kirkintilloch.

Lectures and demonstrations of model railways, model engineering, woodworking, metal work, etc., are given.

The club's "O" gauge fine-scale railway, on which work has been proceeding since last July, has now reached a stage where it can be shown at exhibitions.

Anyone interested in the facilities of the club should contact the secretary, A. Allan, "Mossbank," Hawthorn Avenue, Lenzie (telephone Kirkintilloch 2367).

CANTERBURY AND DISTRICT MINIATURE RAILWAY CLUB

The above club is now established and meetings are taking place on every other Tuesday, our next three meetings being on Tuesdays, April 5 and 19, and May 3.

The meetings are now being held at a restaurant, The House of the White Swan, Northgate, Canterbury, at 7 p.m., and anyone who is interested will be most welcome.

Meetings so far have covered discussions on types of layouts and motors for "OO" locos.

A model building competition for the juveniles is under way.

APRIL MEETINGS

BIRMINGHAM MODEL RAILWAY CLUB

6 Track Night.
14 No Meeting.
20 Track Night.
28 Mr. A. Lee: "Mechanisms and Transmission."

COULSDON MODEL RAILWAY SOCIETY

4 Talk. The Wealden Railway. D. E. W. Anderson.
18 Track Night.

HODDESDON AND DISTRICT MODEL RAILWAY SOCIETY

13 Ten-minute Talks.
27 Visit to a Club Member's Layout.

HULL MINIATURE RAILWAY SOCIETY

7 Track Night.
14 Dutch Auction. The annual turnover of surplus equipment.
21 Track Night.
28 The Annual General Meeting.

MANCHESTER MODEL RAILWAY SOCIETY

2 "Scenic Modelling." R. W. G. Bryant.

MODEL RAILWAY CLUB

7 Collection of Models for Exhibition.
12-16 Exhibition.
28 Track Night. S.R.

WIMBLEDON MODEL RAILWAY CLUB

13 Talk. "The Great Central Railway and its Predecessors," by George Dow, Esq.

NEWS AND VIEWS OF TRADE INTEREST TRADE

SEEN AT THE FAIR

The Trix Whistle Coach.

NOWADAYS, when the proprietary trains are such fine scale models, the toy fairs hold much of interest for the railway modeller. We therefore took the opportunity offered by the recent Brighton Toy Fair to see what new and exciting things are in store for us.

Trix had on show the new whistle unit, which is mounted in a neat van body, and the whistle can be blown anywhere on the track. The coach unit requires alternating current, and its use is therefore restricted to a Trix layout, but a separate whistle unit that can be located at any convenient point on any system, at a tunnel mouth for example, can be worked on A.C. or D.C. This unit and all other items in the Trix range which can be used with any " OO " system are now being packaged as a separate range. At present the signals are so packed, but we saw a neat range of lineside notice boards which will shortly be introduced.

Other additions to the Trix range are the Meteor 3-unit diesel railcar, with whistle and new positive reverse, and the revolutionary Trix Junior electric train set, which uses neither batteries nor power units, but has a hand-turned generator as a source of current supply. Control—forward, reverse and speed—is thus simple and positive, and ideally suited to the younger enthusiast. The Junior introduces a neat bogie suburban coach, which is available separately, while the luggage van, which contains the whistle unit, can be obtained without the unit if desired.

The Trix X-acto range of craft knives has two useful extensions, an inexpensive knife costing 1s. 6d., complete with two double-sided blades, ideally suited for trimming card for modelling, and two razor saw blades which fit into the large X-acto Handle, again a useful tool for modelmakers.

Meccano Ltd. have two additions to the Hornby Dublo range; some new four-wheel tank wagons, with several developments in the offing.

Tri-ang Trains have two new locomotives, a 4-6-4 tank with a distinct colonial air, and a twin diesel. The latter is an extremely powerful locomotive, and can easily haul a fourteen-coach train.

Their new mail coach, which is complete with pick-up and dropping gear, is a really nice copy of the prototype. It is the first model we have seen that will drop the bag after picking up, and although some slight liberties have been taken with the methods the results are first class. The unit is ramp operated, and it would appear that it could, without undue difficulty, be adapted for any track system.

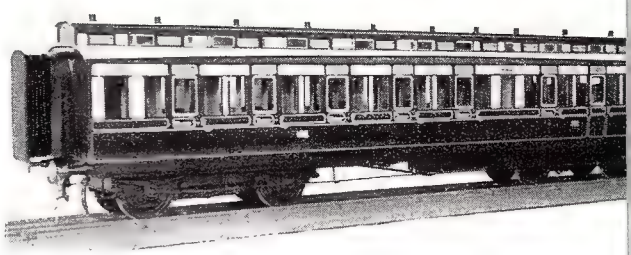
B. J. Ward's Master Model series has been enlarged. A very nice bus shelter, a useful picket fence, some naval and military personnel and pit workers and a range of low relief buildings have been added.

7mm. SCALE TRANSFERS

A selection of the M.R.C./M.M.R.S. transfers. Top row : L.M.S., N.E.R., G.E.R. Bottom row : H.R., G.C., L.S.W.R. Reproduction full size.

The Model Railway Club and Manchester M.R.S., have recently produced a range of 7mm. scale transfers for their members, a selection of which is illustrated above. These transfers are of the highest quality; our illustration, unfortunately, cannot do justice to the detail or fine colouring of these valuable items. The club's own needs being met, they are now willing to supply other enthusiasts. The transfers cost 1s. per set, plus s.a.e., and can be obtained from the club secretary, as announced in our small advertisements last month.

EXLEY COACHES



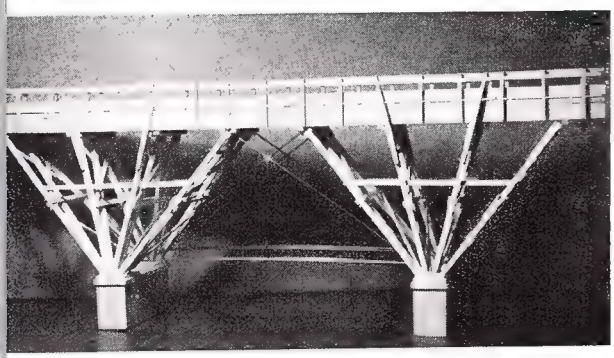
An Exley " pre-group " G.W. clerestory.

We have recently received from Exley a representative selection of their extensive range of standard coaches. The finish and quality of these fine models are absolutely first class. Post- and pre-group coaches are available as standard, the pre-group vehicles

WINDOW

being fully lined in the elaborate liveries then in vogue. All coaches have interior fittings, and full roof and end detail is provided, together with corridor connections where appropriate. We were particularly pleased to note that such telling details as dummy collector shoes and periscope were fitted to the motor coach of the S.R. electric set.

TIMBER VIADUCTS



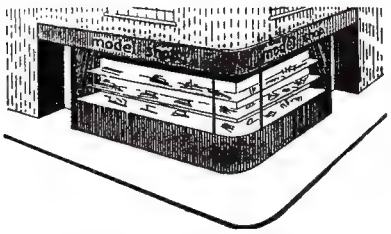
Latest Ratio viaduct kit.

Some time ago we were talking to J. C. Webster, of Webster Development Co., deploring the dearth of timber viaduct kits. The result of that conversation is that two new kits have been added to the Ratio range, a Brunel fan viaduct and a typical pile structure, used for short, low spans. Our illustration shows the built-up fan viaduct, which is a $\frac{1}{8}$in. scale model of two spans of Walkham viaduct (drawing in March 1953 RAILWAY MODELLER). Any number of spans can be added ; a four-span viaduct would be a neat way of crossing a doorway. The pile viaduct is equally attractive ; again two or more units can be used to extend the viaduct to any desired length.

Each viaduct is 17in. long, the fan measuring 5$\frac{1}{2}$in. from base to deck, the pile 3$\frac{3}{4}$in. These heights can be modified ; the fan can be increased to any height within reason by extending the pier. The pile can be shortened to about 2$\frac{1}{4}$in. Despite their apparent complexity, both kits are extraordinarily easy to assemble.

"O" GAUGE LITHO SIDES

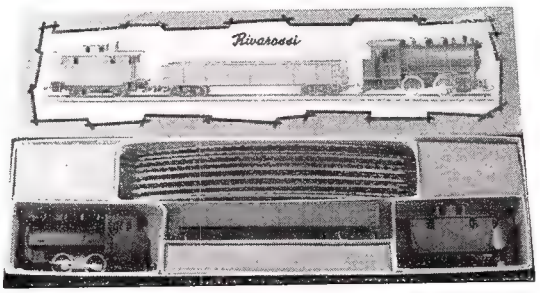
Douglass Models have introduced a pair of litho sides for "O" gauge vehicles, an open wagon and a van, retailing at 1s. 6d. per set. These paper sides are made to conform to the Leeds bodies, and can thus be used by owners of such vehicles to furbish such stock as is becoming worn after many years of hard work.



TRACK CONVERSION

The Southgate Hobbyshop has submitted to us a list detailing its scheme for exchange of proprietary for scale flexible track. We were pleased to note that the conditions of exchange were clearly and fairly laid down. The list, giving full details, can be obtained on application.

NEW RIVAROSSI TRAIN SET



Our illustration shows a very popular packed set now supplied by Rivarossi, comprising simplified plans of the Baltimore and Ohio 0-4-0 reviewed in February and the gondola and four-wheel caboose together with a circle of track, costing £4 15s. 0d. The models themselves are available separately with added detail and, in the case of the vehicles, full lettering. The caboose costs 15s. 9d., the gondola 19s. 10d. The performance of these excellent models leaves nothing to be desired and their wealth of detail has to be seen to be appreciated.

We have been asked to make the following trade announcements:

E. B. Leng, 2d Melville Road, London, N.W.10, will be closed from April 15 and will reopen on April 27.

Cherry's (Northern) Ltd., late of Whitley Bay, Northumberland, ceased to trade as from February 1, 1955, and all communications should be addressed to 66 Sheen Road, Richmond, Surrey.

They wish to stress that the above company has no connection whatsoever with Cherry's (Surrey) Ltd., of Richmond, this latter being an entirely separate concern.

ADVICE BUREAU

The Bureau is at your disposal to assist you with your problems. The service is free, individual and personal, but we reserve the right to publish any query we consider to be of interest. The advice given is based on the experience and opinions of our staff.

Queries should be addressed to the Peco Technical Advice Bureau, Pecoway, Station Road, Seaton, and should be accompanied by a s.a.e. and coupon on page xi. We regret that we cannot prepare special designs for individual readers.

It is possible to see from the letters we receive from beginners the problems that most beset them. We are therefore, in this issue, departing from our usual practice of replying to specific queries and are answering what we believe to be the major problems facing the tyro.

If I convert my three-rail system to two-rail must I buy new controllers and power unit? Also, will my power unit be affected if I change to scale track?

No. The power supply is not in any way affected by the track or pick-up arrangements. Any 12-volt D.C. motor can be controlled by any 12-volt D.C. power unit/controller combination.

Which is the best type of power unit to buy?

The choice between the different units is largely one of personal preference, each type having its particular advantages. However, the beginner with little electrical knowledge will probably find the combined power unit/controller more convenient.

Which is the best, two-rail or three-rail?

Again this is largely a personal matter, but in the case of "OO" gauge two-rail is almost universal and, today, slightly cheaper. There are, however, no electrical complications in either system.

What is the best gauge to use?

This sort of question leads to fights! At the moment "OO" is most popular, and as a wider range of equipment is available it is the easiest gauge to work in (except outdoors, where "O" is more suitable), but ease does not denote merit, or vice versa!

For safety adopt either of the main gauges, "O" or "OO," but if you really want to work in some other scale then go ahead; you won't finish your layout so quickly or so easily but you'll still have plenty of fun.

I have room for a small "OO" layout, but am considering going in for "OOO" in order to get twice as much in. What are your opinions?

The only valid reason for adopting "OOO" is that you enjoy fiddling with tiny mechanisms.

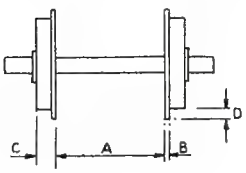
Flt.-Lt. Charman's article in this issue must surely show that a reasonable "OO" layout can be built in the most restricted space. The idea that reducing the scale increases the scope of the layout is true only where the supply of parts for both scales is equal; this is certainly not the case here.

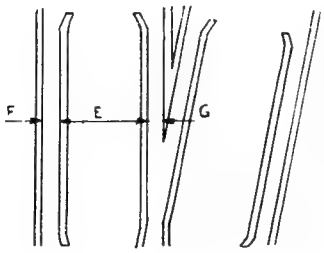
There are many proprietary trains on the market, all for "OO" gauge. Can I use all of them on one system?

Due to differences in wheel standards, most proprietary stock will run only on its own track, or on track and points designed for that purpose. The depth of flange is important, but the vital dimensions are the back-to-back measurement of the wheels, and the check rail clearances when points are built conforming to correct railway practice. This difficulty can be overcome by universal pointwork, but there still remains the problem of differing electrical arrangements, leading to further complications.

We therefore recommend that all locomotives and rolling stock be converted where necessary to B.R.M.S.B. or N.M.R.A. standards (these are, in practice, interchangeable) for two-rail pick-up. It will be seen from the table below that Farish, Rivarossi and Fleischman equipment already conforms to these standards, as do the products of all leading model railway suppliers.

As it is possible to obtain rolling stock wheels to suit all the proprietary standards, an alternative is to retain your favourite proprietary standard. Rolling stock can be added from other ranges, or can be home-constructed, while it is usually possible to have other types of locomotives converted to your chosen standards.





"OO" GAUGE STANDARDS

	A	B	C	D	E	F	G	System of Electrification
*B.R.M.S.B.	14.50	0.50	2.50	1.00	14.00	1.25	1.25	12v. D.C.‡
*Graham Farish	14.50	0.50	3.15	1.50	14.00	1.25	1.25	12v. D.C. 2r. or 3r.
*Rivarossi†	14.50	0.80	3.00	1.20	14.00	1.25	1.25	12v. D.C. 2r.
*Fleischman†								
Hornby Dublo	14.25	0.75	3.00	1.35	13.60	1.30	1.60	12v. D.C. 3r.
Marklin	13.50	0.75	3.50	1.75	13.00	1.75	1.75	20v. A.C. 3r.§
Tri-ang‖	13.50	0.75	4.00	1.50	13.00	1.75	1.75	12v. D.C. 2r.
Trix	11.75	1.50	4.25	2.00	11.00	2.75	2.75	14v. A.C. 3r.¶

ALL DIMENSIONS IN MM GAUGE, 16.5MM.

Notes. * Standards interchangeable.
† To N.M.R.A. standards.
‡ 2-rail, 3-rail or stud contact at user's choice.
§ Reverse by 28v. impulse.
¶ Reverse by current interruption.
‖ Dimensions vary.

HAMBLINGS

WILL EXHIBIT

ITEMS OF GREAT INTEREST TO ALL MODELLERS

on their stand at the Model Railway Club Exhibition, Central Hall (April 12—17).

These include

The full range of BILTEEZI sheets. Twenty sheets now available.

The GNAT loco, a mighty favourite.

The range of MERCO building papers and litho sheets for coaches and wagons.

Our range of constructional parts for locos, coaches and wagons.

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The Original Home of "00" Gauge

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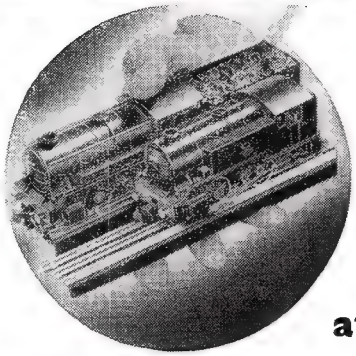

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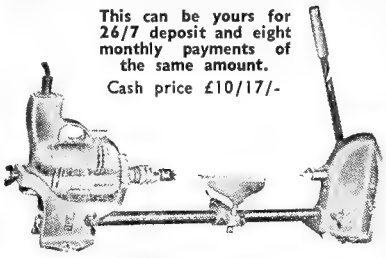

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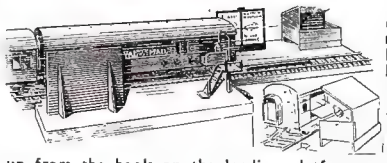

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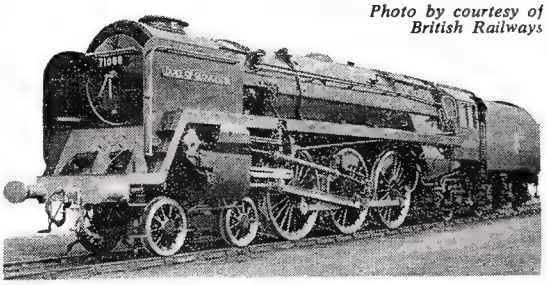

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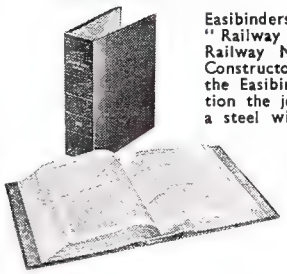

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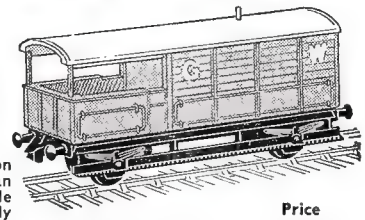

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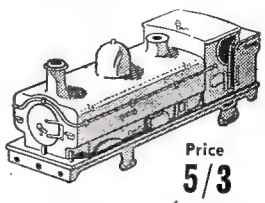

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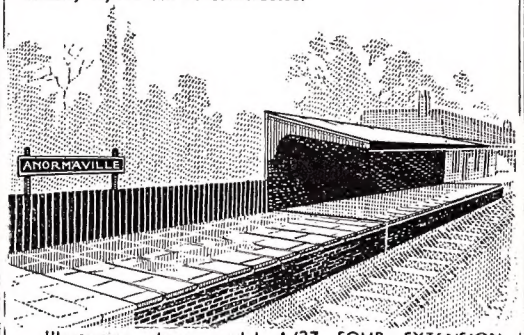

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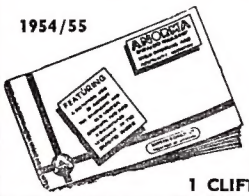

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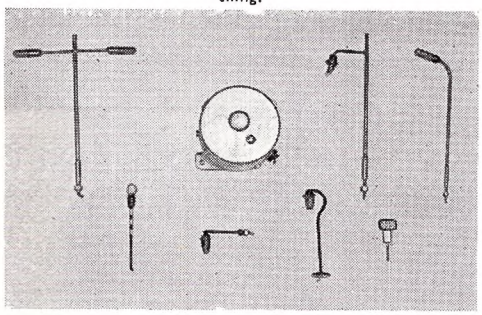

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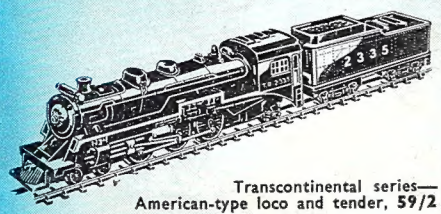

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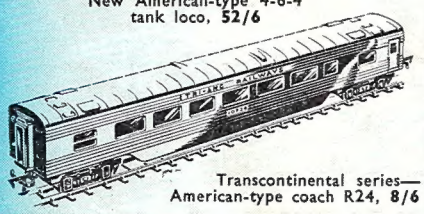

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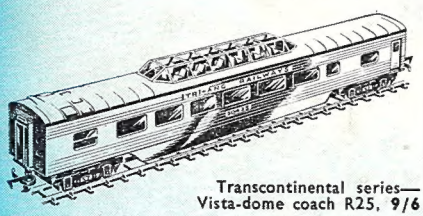

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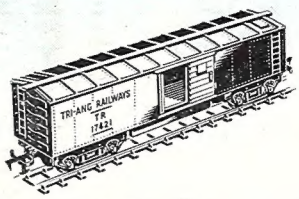
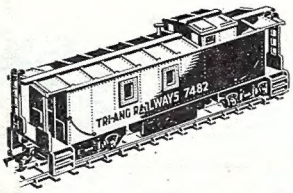
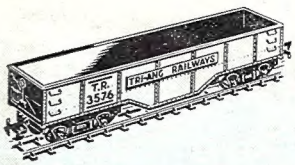


American box car R114 ..... **7/3**



American caboose R115 ..... **7/3**



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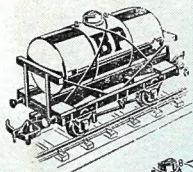

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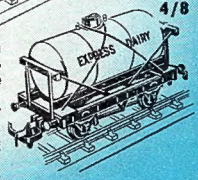

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